The Builder.

No. CCLXII.

SATURDAY, FEBRUARY 12, 1848.

LAST Monday we rambled to several places, and if our readers will let us do it over again, they shall hear something of what we saw. To get into the city now-a-days is no joke; inadequate thoroughfares, wholly in the possession of reckless and competing omnibus drivers, against whom Colonel Sibthorp sought protection in the House of Commons the other night, make the journey a work of time and trembling. Improvement in this respect is devoutly to be wished for by every resident or visitor whose life or time is worth any thing. At present, unhappily, there seems little prospect of it, but the daily increasing necessity must ultimately bring it about.

Twenty minutes were we fast in Fleet-street (and all know, that being fast there, is very slow work), but we felt anxious to see the Roman house recently opened, as mentioned last week, and bore the confinement as much like a philosopher as temperament would permit. In sober seriousness, however, we have 'many a time and oft' travelled *sixty miles* on the Great Western Railway (profitably employed too, the while), in the time that was wasted in getting from Brompton to Lower Thames-street, on this said Monday morning. Surely there is matter for thought in this, and a pricking argument for improvement.

The new Coal Exchange, as our readers know, is to be built on a plot of ground in Thames-street, at the corner of St. Mary-at-Hill, nearly opposite to Billingsgate:* and it is close to the eastern boundary of this piece of land that part of a Roman building has been laid open in digging for the foundations. The discovery has excited much interest, and the steps which have been taken by the parties in authority, with a view to an investigation of the building, and, it is to be hoped, its preservation, are very creditable to them, and shew that a different feeling prevails in the city from that which was dominant when, for many years, every remnant of ancient London which turned up was wantonly destroyed. The British Archæological Association made early mention of it: on Thursday in last week Mr. Bunning, the architect engaged, forwarded a plan and description of the remains to the Society of Antiquaries; and on Tuesday last they were fully illustrated at a meeting of the Freemasons of the Church.†

The remains consist chiefly of part of an apartment (or it may have been a passage-way), paved with common red tesseræ, each about 1¼ inch square, and a hypocaust which is semicircular on one side, and projects, as a bow, before the outer wall of the first-named apartment: this outer wall is 3 feet thick, built of tile-like bricks on a course of Kentish rag stone, and the mortar contains pounded brick, now understood to be an unfailing sign of Roman work. The commonness of the pavement (compared with the fine specimens of Roman pavements discovered as well in London as in various parts of the country) would seem to shew that this apartment was appropriated to common purposes.

The heating chamber—the hypocaust (not hypocaust, or *bath*, as it is erroneously expressed)—is exceedingly interesting, and becomes more so when carefully examined, as it is found to agree to half an inch in all the dimensions with those given by Vitruvius, in his instructions for forming the *hypocaustum*.

The hypocaust, as all our readers doubtless know, was a hollow floor, so to speak, communicating with a furnace by a flue, so as to receive the heated air when wood was burnt in the furnace, and thus warm equably the apartment above. A sound bottom having been formed, little brick pillars, 8 inches square, Vitruvius says, were raised, about 2 feet from centre to centre, and about 2 feet high. On the top of these piers large bricks, stretching from one to the other, were placed, to cover in the whole, and upon these a layer of pounded tile and chalk, covered with a fine cement, or a mosaic pavement, formed the floor.

The hypocaust in Thames-street agrees with this in every respect. The piers are 8½ inches square, 2 feet from centre to centre—leaving a space between each, therefore, of from 15 to 16 inches square,—and 2 feet high. The bottom of the hypocaust is formed of concrete, and the covering tiles carry a layer of the same material to form the floor of the apartment above. Similar constructions, both abroad and at home, have been found to agree in this manner with the foregoing description; but when we put a rule to the parts of the hypocaust in question, opened to view after the lapse of so many centuries, and found the dimensions agree, the confirmation came more strongly home, and interested us much. Again, Vitruvius says that the bricks forming the little piers were not put together with mortar, because of the effect heat would have on it, but with clay; and when we carefully lifted off one of our Thames-street tiles, we found, with great satisfaction, this had been the case there also.

We should mention that the flue, which opens into the hypocaust by two branches, divided by a triangular mass of brickwork, and four piers similar to those already described, extends eastward under the adjoining premises, and has been probed to an extent of 14 feet.

It is most likely that the room above this hypocaust was a bath, but we think not necessarily so: there are passages in ancient writers which shew that the Romans used a similar arrangement to heat ordinary apartments. Pipes opening into the hypocaust were inserted in the walls, and conducted the warm air to various parts of the structure: some pipes of this description were found at the building in question, but we are not aware in what position.

The apartment first described exhibits a feature which, although we think not part of the Roman construction, has led to much discussion. This is the remains of what appears to be a well, about 2 feet clear diameter, formed of neatly wrought blocks of chalk on an elm curb, and coming down from nearly the present level of Thames-street to within a few inches of the tesselated pavement. It would seem that those who constructed the well could not have known of the existence of the pavement, or they would have sunk the former a little deeper, to get a sound bottom for their curb.* There are difficulties in the way of opening the ground eastwards, but we trust these will be overcome to a certain extent, and that further investigations will be made.

Leaving the site of this very interesting discovery, we made our way to the Golden-lane district, concerning the miserable state of which, in a sanitary point of view, we recently spoke,—intending to make some further inquiries concerning it. In the course of the perambulation we were startled by an apparition of old St. Bartholomew's Church, which used to stand by the Bank, with its curiously-finished, or rather unfinished, tower, looking as if the top had been blown down, leaving on each side a doorway, or window-frame, standing alone. It appears that the Bishop of London, when applied to for his sanction to the proposed removal of the old church, stipulated that a new church should be erected in the neighbourhood, and the internal fittings and decorations having been preserved, and apparently some of the stonework too, Mr. Cockerell, to whom the commission was given, has made the church as nearly like the old one as possible: the main difference inside is, that it has no clerestory, which the original church had, and has galleries, which the old one had not. It is nearly ready for consecration.

Returning, we looked into Mr. Sydney Smirke's new coffee-room at the Carlton Club, Pall Mall, which was opened to the members last week. It is a handsome apartment, 93 feet long, 37 feet wide, and 21 feet 3 inches high, formed into three compartments by Corinthian columns on pedestals (four pairs), which project into the room. The fire-place is in the middle of the long side of the room, and the entrance door is opposite to it. The dressings of the latter include columns of French marble.† There are three windows at each end, and a large octagon light over the centre compartment. The ceiling is formed with deeply recessed panels highly enriched, with a handsome frieze beneath, and is polychromatised by Mr. Sang, in a more artist-like manner than any thing he has before done. The walls are lined with satin-wood to a certain height, and above that are painted in panels of faint greens. The columns are green scagliola with white capitals, gilt, and black and gold pedestals. The effect of the whole is very satisfactory. Some elegant candelabra by Whitfield and Hughes deserve commendation.

The British Gallery, nearly opposite, was opened to the public that day, and we paid a visit to it on leaving the Carlton. The mismanagement of this institution is so well known, the abuses which prevail there are so universally and so loudly talked of, that repetition seems unavailing. As might be expected under such circumstances, the exhibition is but of indifferent character as a whole, although it contains a number of very nice pictures. Danby, Linnell, Ansdell, Lance, Linton, Cooke, Lee, Goodall, Branwhite, Hildebrandt, Sidney Cooper, Parris, Inskipp, Marshall, and Sir G. Hayter, are amongst the most successful exhibitors: we must give the collection, however, separate consideration hereafter.

* An engraving of the proposed building is given in vol. v., p. 566.

† Mr. Stothard read a paper on the subject; and Mr. C. H. Smith, Mr. W. P. Griffith, Mr. G. Godwin, and others, gave additional information. We are compelled to postpone our ordinary report of the meeting, as we are of the last meeting of the Institute of Architects, till next week.

* The discovery of wells lined with chalk is not unusual in the City: one was found in 1844, in Maiden-lane, now Gresham-street. At the meeting of the Freemasons of the Church, Mr. Papineau suggested that the well being formed to receive the water which percolated from the Thames, chalk might have been used in the shape of a lining to the well for the purpose of purifying it.

† It would be well if we were better acquainted with the extent and variety of marbles obtainable from France.

PROFESSOR HOSKING ON THE LATE FAILURE AT THE EUSTON-SQUARE STATION.

When Mr. Hosking handed to the coroner his opinion in brief, on the cause of the failure at the Euston-square station, printed in our last,* the professor said that he had drawn up a general statement of the occurrence, with a fuller development of his views than he thought necessary to trouble the jury with, unless they called for it. The jury did not call for the statement, and therefore it was not read; but as this accident has naturally excited very considerable interest, the public will doubtless be glad to see Mr. Hosking's review of the occurrence in full, notwithstanding that it recapitulates matter which we placed before our readers last week.

We may notice *en passant* that it will be found to bear witness to the correctness of our own summary, and strengthens the opinion we expressed on the danger of trusting to columns so constructed,—which opinion, by the way, was in type before the adjourned meeting was held. We understand that, in order to prevent any fear on the part of the public, it is proposed to take down the south end of the vestibule, which presents similar columns to those which fell, although they are there backed up by a wall.

It appears from the evidence, that the fallen structure consisted of eight circular and slightly diminishing shafts, disposed as columns, in two parallel rows, with an architrave extending in breadth over both rows of columns, and in length over all the columns and the spaces between them, and between the columns and the side walls of the hall, of which the fallen structure formed the upper compartments of the north end; and a superstructure consisting of the upper portions of an entablature, a wall, or rather a series of piers and spaces arched over, and terminating as a continued wall; such upper parts of the entablature, and the wall above it, having been placed immediately over one of the two rows of columns below; that is to say, over the southern row, whilst York stone landings bridged over the space, between the several pairs of columns, of which the two parallel rows consisted, so as to make the columns of the northern row take part with those of the southern row in bearing the weight of the upper parts of the entablature and of the attic wall. It appears further, that the fallen structure stood upon a massive basement wall, which remains wholly undisturbed, except as to four pedestals which were raised upon it, and upon which the several pairs of columns of the fallen structure respectively stood, one before another upon the solid pedestals, transversely of the basement wall below, and which pedestals are more or less broken up and deranged, as to their upper courses over all, and throughout a great part of their height where they received the inner or southern row of columns. The basement wall is of brickwork in mortar, about 60 feet in length, or from side wall to side wall of the hall, of which it forms the north end, and in the lower compartment, 28 feet in height from the top of the footings to the level at which the insulated pedestals begin, and 7 feet, or thereabouts, in thickness, and the pedestals are also of brickwork in mortar, each about 3 feet 6 inches in length, from east to west, or in the direction of the length of the wall under them, of the full width or thickness of the wall immediately under them—that is to say, about 7 feet, and about 5 feet in height, from the top of the basement wall to the level at which they received the columns.

The columns are stated to have been built of bricks in cement, and to have been each 2 feet 2½ inches in diameter at the base, diminished in right lines about their vertical axes to 1 foot 10½ inches at the top, and 20 feet high, standing 1 foot 4 inches apart upon the tops of the pedestals—that is to say, transversely of the basement wall,—and 9 feet 4 inches apart, pair from pair, in the direction of the length of the basement wall, and of the superimposed entablature and attic wall; and the mode of structure of the columns was by disposing bricks edgewise in courses, and laid in every course radiating from the centre, the bricks being mostly cut to a wedge shape to adapt them to this mode of arrangement, and to bring the outer end of the bricks so laid nearer together than they could be brought if not so cut,—the heart of the cylinder being filled in with bricks cut to fill the void which the radiating bricks would necessarily fail to fill, as the diameter of the cylinder exceeded in every course twice the length of a brick. Over the heads of the columns, and upon the bridging stones which bound the several pairs together, springing blocks were formed of brickwork in cement, with skew-backs cut for the abutment of arches, which were turned in four half-bricks, and extended from pair to pair of the columns as an architrave, such arches being formed, also, of bricks in cement, and each arch spanning 10 feet, and rising about a foot, upon a core laid on stout wrought-iron bars, shackled together over the heads of the columns, and extending to the side walls of the hall, to tie in the arches throughout the whole extent of their range, and, in their turn, hung up to the arches, whereby the arches should carry the weight of the core, which rested upon their own ties, and compensate in some degree for the absence of any direct weight upon the backs of the arches above. The arches and the core they suspended thus formed the architrave of the entablature, and, extending transversely over both the rows of columns and over the space between them, a massive iron-tied brick-built beam connected the columned compartment with the side walls of the hall, and promised a rigid and durable structure capable of carrying any weight that could be placed upon it.

The upper part of the entablature was of brickwork and stone combined, as a means of projecting a cornice or preparation for a cornice on the side towards the hall, and above this preparation the attic wall was built of brickwork, in mortar 2 feet 8 inches thick, and 18 feet high, the wall being somewhat lightened by openings for windows over the void spaces between the columns lengthwise, or in the direction of the transverse section of the hall, but extending, like the beam of the entablature below, from side wall to side wall, and uniting itself with the side walls so as to yield support to, as well as to derive assistance from them.

It further appears that the massive basement wall, which remains undisturbed, was founded and built within the months of August and September last, and that the pedestals upon them were built between the 21st and 30th of October following; that the columns were built between the 10th and 22nd of November, and that, after a rest of nearly three weeks, on the 11th December, the superimposed works were commenced, and followed on to the completion, or near completion, of the attic wall, when, on the 6th of January, the columns and every thing depending upon them fell to the ground; some portions of the ruins, and among them the bridging-stones which had lain over the several pairs of the columns, falling to the north of the basement wall, or *from* the side of the impending attic wall, and some portions on the north side, or upon the floor of the hall, of which the structure had formed the north end. The evidence sets forth, moreover,—and the appearance of the work that remains, and of the corresponding work at the south end of the hall, justifies the evidence—that the materials used in the works which fell were of excellent quality, and that they had been executed by able and experienced workmen; the only departure from the usual practice in the execution of such works being in the disposition of the bricks in the composition of the columns. It appears also that the scaffold, which had been used to assist in executing the works which fell, extended along both faces of the work, and was formed in stages as the advance of the work required, and extended in height as the works advanced by adding pole to pole, and by forming stage above stage for the convenience of the workmen; the ends of the horizontal poles, or ledgers, which formed the bases of the several stages being tailed at each end into the side walls of the hall; whilst poles were laid across transversely of the scaffold and of the work, and tailed, in like manner, into a wall north of the passage or gallery, of which the double rows of columns would have formed the south side, and lashed to the poles and ledgers, to prevent the scaffold from rocking from north to south; and these cross-poles or transoms coming in contact, however, either directly or through a frame, with the shafts or columns as they passed from the inner or northern scaffold-poles to the wall north of the gallery, into which their ends were wedged. A still further height of scaffold being required to enable the masons to get up the materials of a cornice which was intended to cope the attic wall, labourers were engaged in raising it accordingly, whilst bricklayers and their labourers were still at work, laying some of the yet remaining courses of bricks to complete the attic wall; but there is no evidence to show that any more than the usual effect produced by men moving about upon the stages of a scaffold at their work, and in the equally familiar progress of heightening a scaffold, was perceived by any of the people who were so employed upon and about the scaffold at the time of, or immediately preceding, the accident.

It appeared also that the fall took place suddenly and without warning, no previous rocking of the work or of the scaffold having been noticed by any of the people upon or about it, the columns and their superstructure having dropped down together upon, and on both sides of, the basement wall, and not falling out on one or the other side much beyond the scaffold poles; those portions only of the scaffold which rested upon the falling structure, that is to say, the stages of which the put-logs, or cross-bearers, of the scaffold rested upon the wall, going down with it.

Having thus recited the circumstances as they appeared in evidence and from observation of what remains, and of the corresponding works in another part of the same building, I proceed to develope the causes which may have induced the failure of the work.

The power of brickwork to resist pressure depends upon the manner in which the bricks are laid as to their beds, and disposed with regard to one another, and to the direction in which the pressure is imposed upon them when combined in a structure. Bricks laid upon their broadest faces,—which faces are technically called their beds,—are less liable to be overturned and less liable to be forced into a yielding body below them than they are when laid upon their narrower sides, or edges; and bricks laid on their beds, or flat, will cover and bridge over a joint, and throw the bearing upon the bricks below more certainly and more effectually than if laid on their edges; and in the arrangement of bricks on their beds, flat, and so as to cover, and break joint, course above course, consists what is termed bond; and it is by means of bond that bricks can be piled upon bricks, and be extended both in length and in breadth, so as to form a compact mass capable of withstanding any pressure that will not crush the materials when applied at right angles to the beds of the bricks; the setting material, or mortar, in the joints between the beds being in layers thin with relation to the bricks, in proportion to its greater yieldingness, and being of such consistence, or having attained such a degree of induration, as to be capable of withstanding pressure to the same extent as the bricks themselves. But if bricks are not so laid and so disposed in any structure that every brick in any course above is supported by bricks below on both sides of every joint, the brick is liable to be broken across, or to be pressed down into the softer setting material, and thereby to induce the failure of the work of which it forms a part; and as bricks laid on their edges cannot bridge over a joint below so as to break joint with the same effect that bricks laid on their beds can, bricks on edge do not bond with the effect necessary to give the full strength of which brickwork is capable. Brickwork is, therefore, in common practice, built with bricks laid flat, and not on edge.

In building round bodies, however, as columns, with bricks, the proper disposition of the bricks to bond truly cannot be maintained, and consequently the strength of which brickwork is capable cannot be attained with bricks applied to produce such a form; and as bricks employed for such a purpose must be cut, and so be applied in fragments, the result

* See page 62 *ante*.

can only be a concretion of brick-material more or less skilfully packed, and depending in a greater or less degree, according to the bed given to the bricks, or fragments of bricks, upon the consistence of the setting material. But setting material, by whatever name known, must be plastic to be worked, and the power of a concretion of bricks and mortar or cement to resist pressure can hardly be greater than that of the setting material, which being plastic, is in a yielding condition, although it may be capable of becoming indurated to a degree equal to that of the harder material which it is intended to combine.

Now, in the case in question, the basement-wall and the pedestals upon it are built of bricks set in mortar, and bonded in the usual manner, and the weight of the superstructure came upon the pedestals and upon the walls at right angles to the beds of the bricks in the work; that is to say, the work was in the strongest condition, and it received the pressure in the manner which exposed it in the least degree to derangement, so long as the pressure remained steady and direct. But the columns were round bodies, and the bricks used in building them were not laid flat or on their broad beds, but on edge on their narrow sides, and they were cut and packed to produce the required form, involving the use of many shattered fragments in every course, to fill the body with solid matter. This process necessarily called into operation the adhesive properties of the setting material to combine the fragments, and the strength of the structure was, consequently, no greater than that which the cement, used as a setting material, had attained by induration. But it is admitted on all hands, that cement, that is to say, cement of the kind used in the columns which fell, requires time to indurate fully, or to attain a degree of hardness in any degree approaching to that of good bricks, in which state alone it could hold together the bricks and fragments of bricks, which the absence of bond required it to hold together with any think like the effect of bonded brickwork.

There are, moreover, circumstances in the composition of the structure which make it necessary to inquire, whether the unequal pressure of the upper part of the entablature and of the attic wall over the columns, may not have induced compression of the setting material in the joints of the work in any part? The weight of the superstructure fell somewhat unduly upon the inner or southern row of the columns; and if the joints of the work in the columns had been compressible, the superstructure would have taken a leaning southward, which, if it had taken place, must have been observed, as the men were still at work upon it. Roman cement—the cement in question—sets, however, in a very short time; and all the cement in the columns must have taken a set very long before the attic-wall was raised, and having once set, it is no longer plastic, and therefore not compressible but by crushing, which wholly destroys it; and if the cement be crushed, the work depending upon it necessarily fails. Nor can it be supposed that the mortar in the pedestals yielded unequally, if it yielded at all; for although the weight came upon it more by the southern than by the northern row of columns, the difference could not have been so great as to act unequally upon the mortar in the pedestals; if, indeed, the superstructure had been heavy at all in proportion to the power of supporting weight, which the pedestals possessed, seeing that they were built of brickwork in its strongest form,—that is to say, with the bricks on their beds, and truly bonded.

And it is also necessary to inquire whether, having regard to the weight of the superstructure, and to the assumed power of resisting pressure of the substructure, and particularly of the columns, the columns could have given way under the dead weight put upon them? This does not appear probable, having regard to the good quality of the materials used, and to the undoubted skill and tact of the workmen employed, and to the time that had elapsed from the completion of the columns to the fall of the structure, for although complete induration of the cement could not have taken place, the ordinary practice of building would have justified the proceeding with the work. It is, therefore, my confident belief that if the cement had been fully indurated, the columns would have carried safely all the weight which they were required to carry, and, under all contingencies to which they could have been exposed; nor is it likely that the columns, as they were, would break up under a merely dead weight such as that of entablature and attic wall, but as they certainly did break, it seems very certain that the movement of the scaffold, induced by the exertions of the men who were engaged in increasing the height of its already lofty poles, together with that derived from the men who were at work upon its stages, gave the impulse which induced the fall.

February 2, 1848.

THE PRACTICE OF ARTISTS OF THE MIDDLE AGES.

FOUNDED ON THEOPHILUS.*

In reconsidering the writings of the early fathers of the church, or of the more humble professors of the Christian religion, who, priests themselves, worked in silence and in prayer for the advancement of the true faith, which had not only survived the war with paganism, but had issued triumphantly from the conflict, one eminent fact is to be observed: the alliance of religion with science and the arts was confirmed, and these were fostered to an extent before unattainable; for the floodgates which had hitherto confined knowledge within a mystic boundary had been opened, and while admiring the arts of antiquity in all their splendour, industrious civilization was enabled to profit by the lessons which an increased and increasing knowledge were enabling them to receive.

In order to appreciate the arts of antiquity in all their beauty or magnificence, therefore, objects which have been inspired by religious faith must be consulted: the transformations of Brahmah the hero-worship of Egypt, or the metamorphoses of Jupiter and Polytheism, have certainly exerted an influence upon art, in proportion to the state of advancement of the nations among which these different faiths prevailed, and have favoured, rather than repressed, the search for the useful and the good. Among the Hebrews, who borrowed, from the Egyptians and Phœnicians, the practice of those arts which appeared the most useful to them, the refinement of Egyptian taste was introduced into the temple, and the ornaments of the high priest demanded the aid of the artificers of Tyre and Sidon. Although Moses is little communicative upon the arts of his period, he yet makes honourable mention of artists and artisans.—(Exod. xxi. and xxv.)

Goldsmiths, sculptors, smiths, all artisans in general, were free-men, as among the Egyptians, not slaves, as among the Romans. Christianity, which has for its foundation the love and welfare of the human race, had no sooner become secure, than its efforts were directed to the teaching of the great mass of mankind; and from the third century, the light of universal toleration arose, which dispersed the clouds in the systems of Pythagoras and Aristotle. Jamblicus and Proclus, with Porphyrus, initiated into the mysteries of the Neo-Platonician school, and opposed to the dogmatic spirit of the first theologians of the church, plunged into the mysteries of Egypt for weapons of attack, and it is certain that at an early period of the Christian era, we find the traces of an apparently new science, calculated materially to influence the future history of the arts and sciences, viz.—the "sacred science" (*ἐπίστημα ἱερά*) of the Neo-Platonicians.

The book from which this sacred art was taught was called "Chema" (*χῆμα*)†—from this the word "Chemia," in the fourth or fifth century arose, and Julius Firmicus, in the fifth century, uses the phrase "*scientia alchemiæ*," in a work "On the Influence of the Stars upon the Fate of Man." From this period the study of chemistry was openly followed.

The Christian theologians of this early period, who were seeking the means of confuting their antagonists at all points, drew largely even from the writings of the Greek philosophers; profane history was laid under contribution, and the great characters of the old pagan philosophy were summoned to aid in the overthrow of the opponents of Christianity. These philosophers of Greece became celebrated in the early iconography of the church, as those "*who had spoken of the incarnation of our Lord.*"

Apollonius was represented as an old man, bearded, reciting the following words:—"I announce, in a trinity, one God reigning over all things. His incorruptible word shall be conceived in the bosom of a young virgin. Like unto a bow, which darts forth fire, it shall rapidly traverse space; it shall seize the entire living universe, and shall offer it as a present to its father."

Solon, the Athenian, an old man, is made to say:—"When he shall overrun this changeable earth, he shall set up his throne without fail. The ceaseless aim of Divinity is to destroy incurable passions. He shall be an object of hatred to an incredulous people. He shall be suspended upon a mountain, and shall suffer all these things voluntarily and with sweetness."

Thucydides, as an old man:—"God is an evident light, glory to him; from his intelligence all things proceed, and reform themselves into a single unity. There is no other God, nor angel, nor mind, nor wisdom, nor substance; but he is the only God, the creator of all existing things; the true Word, fecundity itself, which, descending upon a fertile nature, has produced water from chaos."

Plutarch, as a bearded sage, recites:—"Nothing can be imagined beyond him who surpasses all things: it is from him and none other that the Word proceeds."

Plato, represented as an imposing old man, says:—"The old is new and the new old. The Father is in the Son and the Son in the Father; the unity is divided into three, and the trinity is reunited in unity."

Aristotle proclaims:—"The generation of God is unwearied by its nature, for the word itself receives its essence from him."

Philo-Philologus says:—"Behold him who has walked over the immensity of the heavens, which surpasses infinite flame and imperishable fire. All tremble in his presence; the heavens, the earth, the sea, the abyss, hell and its demons. Without father himself, he is his own father."

Sophocles, as a bald-headed old man, recites:—"There exists an eternal God, simple in his nature, who has created the heavens and the earth."

Thoulis, king of Egypt:—"The Father is the Son, the Son is Father, incarnate, an all-powerful God.

The holy Balaam, as an old man veiled, says;—"A star of Jacob shall arise; a man of Israel shall arise, who shall crush the chiefs of Moab."

The wise sibyl:—"An eternal God shall come from heaven, who shall judge all flesh and all the universe. Of a virgin, spouse without stain, shall come the only Son of God." (*Ἑρμηνεία τῆς ζωγραφικῆς.*)—*Greek MS. from Mount Athos.*

These sages (writes M. Didron), Plato, Socrates, and the rest, gave nearly these responses which the Guide for Painters (the MS. from Mount Athos, of the twelfth century) has here prescribed. The Greeks were gratified by representing their great men thus rendering homage and witness to Christianity. One of the most remarkable examples of this class of proofs is painted in the monastery of Ivirôn, at Mount Athos. The exterior porch of the small church of the Virgin (*Παναγία Πορταϊτίσσα*—bearing-virgin) is covered with great figures, representing Plutarch, Thucydides, Sophocles, Plato, Aristotle, Chilo, and Solon, each carrying a banderole, in which the Christian belief is inscribed. Thucydides bears the title of "the PHILOSOPHER" (*ὁ φιλόσοφος*); Sophocles, of "SAGE" (*ὁ σοφὸς*); Solon, of "Athenian," (*ὁ Αθηναῖος*); Chilo, of "Learned" (*ὁ φιλόλογος*): the rest have not epithets attached. The inscriptions borne by these

* Read at a meeting of the Freemasons of the Church, by Mr. R. Hendrie, Jun.

† Some authors have supposed from "Cham," who gave his name to ancient Egypt.

figures differ from those given by the Guide; but neither of these appear derived from the works of the sages and philosophers, but are rather drawn from the *tendency* of their conduct or their writings.

The artist, George Syrlin, has perpetuated this custom, and sculptured upon the stalls in the Cathedral of Ulm (A.D. 1469 to 1474), Socrates, Plato, Aristotle, and Pythagoras. Germany was early impressed with these Byzantine tastes and customs, which she had thus preserved.*

If the Latin church neglected this branch of iconography, borrowed from the profane history, the Sibyls, those pagan prophetesses who predict the birth, the life, death, and resurrection of Christ, are there found, side by side, with the Jewish prophets, as were the philosophers of the Greeks. The Sibyl of Persia, of Libya, of the Red Sea, of Cumes, of Samos, of the Euxine, of Europe, of the Tibur, the Sibyl Agrippa, of Delphos, of the Hellespont, and of Phrygia, figure not only in representation, but in the processions of the Roman church. At Seville, the twelve Sibyls form part of the pageant upon Good Friday; each carries the emblem characteristic of her prediction.

The Greek church gave likewise an equal place of importance to the characters, as well as the events, of the Old Testament, as to those of the gospel, which the Latins yielded in favour of Christianity and the saints.

The marvels of the ancient law, in which were represented the orders of the heavenly powers, as classed by Denys, the Areopagite, and the fall of Lucifer, comprised the history of the personages of the Old Testament, from the creation of Adam to the death of Holophernes. The Greeks also gave a place to the figures of the holy patriarchs from Adam to Jacob; to the twelve sons of Jacob; to the prophets and the judges; to the holy women, from Eve, through Sarah and Rebecca, to the righteous Anna, the mother of the Virgin: they represent particular prophecies, and conclude with the delineation of the "Tree of Jesse."

The Alexandrian school of Alchemists, the Neo-Platonician philosophers, principally sought three things—the philosopher's stone, or material riches; the universal panacea, which would afford long life; and the soul of the universe, or happiness from the commerce with good, or subjection of bad, spirits; but their theories are clothed in such mystic language, that it is always difficult, generally impossible, to unravel them. Ammonius, Plotinus, Porphyrus, Iamblichus, — Egyptian philosophers, — Proclus of Constantinople, studied the Alexandrian philosophy, and carried their theurgic systems to Athens. Athens and Alexandria became the great arena of the last efforts of paganism against the establishment of Christianity. Zozimus the Panopolitan, of the fourth century, the describer of the distilling apparatus, Marie, the Jewess, Synesius, Olympiodorus of Alexandria, Marcus Græcus, the inventor of gunpowder and other combustible and explosive compounds, Cleopatra, Stephanus, and a crowd of alchemists of this period, have passed hitherto scarcely noticed by the historians of science. From the fifth to the eighth centuries the priesthood appear to have collected the wisdom of the past, and to have contributed to the progress of the sciences and of letters; and from the time when St. Isidore, bishop of Seville, at the commencement of the seventh century, condensed the knowledge of his predecessors in his "*Origines*," an encyclopedia of science, in twenty books, ecclesiastics have, from time to time, embodied the results of their studies or other labours, occupied as they still were in propagating the faith, and converting the infidels by exhortation or example.

Schools were established by Charlemagne on the Continent, in forming which, he sought the aid of Alcuin, the celebrated English monk, who, we are told, instructed him not only in history, but in rhetoric, dialectics, arithmetic, and in "astronomy," to the study of which he particularly directed himself. This learned Englisbman had been sent to Italy by the Archbishop of York; and there met Charles, who, having by his beneficence drawn him to France, there placed him with Peter of Pisa, at the head of the schools in France, of which the first was established in the palace of the emperor.

The arts, which had been brought by the Romans into Britain, appear to have been sustained through the vicissitudes which followed the withdrawal of Maximus from our shores. "The most destructive of the northern conquerors, the Anglo-Saxons, did not long continue to despise the pleasing arts, particularly that of painting, which was practised by them with considerable success." (*Henry's History of England.*) If Charlemagne possessed the ruder and sterling qualities of his age to a remarkable extent, he yet was unquestionably indebted to the Anglo-Saxons for the enlightened views which led him to instruct the barbarous nations of his extended empire. The arts had been encouraged at York; the renown of the painted chamber in which Edward the Confessor afterwards died; the remains of the Saxon chased and enameled work, which was esteemed upon the Continent as early as the seventh century; the illuminated manuscripts of the seventh to the ninth centuries, which still exist, prove that the arts, as introduced by the Romans, were never wholly lost amongst us.

Another cause was in action at the close of the eighth, and during the two following centuries, which, although perhaps of secondary importance, as contributing to the progress of science by means of discovery, yet was operating to spread the atmosphere of letters and the arts, by means of laborious compilation and commentation.

The plain, intelligible language in which Geber and many of the Arab chemists began to clothe their thoughts, indisputably advanced the cause of the arts and sciences; we cannot withhold from these the praise of having gathered the seed which had remained upon the withering tree of ancient knowledge, and of winnowing from it the husk of that mystic symbolism designed by Egypt for the purpose of monopolising the sciences. They did even more,—they planted the seed; the young plant was nurtured by them, which, under the hands of the fostering monks of a few succeeding centuries, grew into a sturdy tree, the boughs of which sheltered the tradition and experience of the past.

From the tenth to the fourteenth century little progress was made; the arts were busily pursued, for religion was not solely occupied in preparing men for the future, but was introducing experience into the sanctuaries, and predisposing men for the general scientific movement of a later period, destined to present, under a new aspect of society, one of the phases through which human intelligence proceeds, in its development under eternal laws.

From the eighth and ninth centuries we are fortunate in possessing several manuscripts which have long lain dormant, treating upon the arts, and which form valuable evidence of the condition of the arts during the period to which they belong.

The earliest of these appears to be that existing at Lucca; it is of the eighth century, and of Byzantine origin, probably of the period of the persecution of the Greek artists under Leo the Isaurian, A.D. 726; it contains the necessary directions for dyeing skins, making coloured glass, the preparation of oil, colours, and varnishes for painting, and a description of various substances used in the arts.—(*Muratori Antiq. Ital. Medii Ævi.*, v. 2, p. 269.)

The next author who has written upon the processes of art is the artist-monk Eraclius, who probably wrote about the middle of the ninth century. That Eraclius wrote later than the seventh century, his quotation from St. Isidore, who died A.D. 636, proves.

After a long period of depression, a new impulse had been given to the arts and sciences at an early period of the eleventh century.

"Emulation was first directed to the sciences and literature, which, at that period, the services of the church and political quarrels rendered the most necessary, towards theology, jurisprudence, geometry, logic, rhetoric, music or psalmody, architecture, and painting. Dunstan, Aldred, and Lanfranc in England, Robert in France, Hildebrand at Rome, had been encouraging the arts, raising and decorating churches which the reverence for relics caused to be ornamented by sumptuous shrines and costly gates of bronze or silver. In England, France, and Italy, a great number of manuscripts, ornamented with miniatures and otherwise illuminated, were executed. The ornaments for the altars, desks of gilt bronze, and objects which ornamented the choirs, much favoured the arts of casting metals, modelling, enameling, niello, damascene work, and often produced works of surpassing execution.

It is to this period, the early half of the eleventh century, that the treatise of Theophilus upon the 'Divers Arts' is to be ascribed.

While Greece was the painter of the continent, Tuscany the enameller, Arabia the worker in metals, Italy the jeweller, France the worker in glass, Spain the chemist, Germany anxious in acquiring knowledge and dexterity in all; when all these artists were adorning the church of St. Mark at Venice, and were elsewhere occupied in writing or painting,—the terms were synonymous,—the sacred histories in the churches, so that the illiterate might read the examples set before them, the 'Treatise upon Divers Arts' came forth." *

The treatise of Theophilus is divided into three books. The first is devoted to painting as practised by the Greeks, upon walls, panels, skins, canvasses, and books, with either a tempera or oil medium; of the composition of a varnish of sandarach and linseed oil: the colours used by Theophilus are,—orpiment, ceruse, massicot, cinnabar or vermilion, vegetable reds and blues, mineral blue (the lazurstein of the Germans), minium or red lead, carbonaceous blacks, greens from acetates of copper, terra-verde, and vegetable greens, and sinoper or red earths; of the preparation and laying on of gold, of transparent oil painting, called "Aureola" by the Greeks, of the preparation of colours and of ink.

The second book of Theophilus comprises the nature of "working in glass," and the "costly variety of window work" for which France was renowned. Of sapphire-glass, which was probably coloured with the "sapphire" of the Greeks,—our "lapis lazuli,"—as well as by cobalt; of red glass coloured with iron or copper; of green glass; of the formation and decoration of vases of glass or earthenware with colours or with gold; of Greek glass with a golden ground which ornaments mosaic work, and of a flux for glass.

The third book has evidently been treated by Theophilus with more care and attachment than the others; the eloquent preface, the labour expended in description, and the great volume of the work upon metals attest this. The chapters upon the production of electra or enamels, which art has been supposed of later invention, will be read with interest. Theophilus tells us in his introductory preface that he shall proceed to describe, amongst other things, whatever Tuscany knows of in enamels, or in variety of mosaic or niello. The Tuscans borrowed this art from the Egyptians, the fragment of the case of a mummy, in the Egyptian collection at Turin, of which the ornaments are in a beautiful glass-mosaic, warrant this conclusion.

The Harleian MS. contains much that the other known MSS. of Theophilus want, the description of the organ is rendered complete, the manufacture of bells and cymbals described, of variety of ironwork, of *brasses*, "*interrasilis opus*,"—which is of the nature of our English monumental brasses; of Damascus work in steel. A description of the Italian work promised in the introductory chapter, and never yet fulfilled, follows in this work: the arts of sculpturing, gilding and staining ivory, of gems, pearls, and electra or enamels.

Railway Rating.—An award has just been made by Mr. Frederick Pollock in an appeal by the Great Western Railway Company against the assessment of their terminus and railway in the parish of Paddington; the line of railway in the parish is rather more than a mile in length. The witnesses examined on the part of the parish were Mr. A. Giles and Mr. W. Tress, who claimed, as the rateable value, 11,361*l.*; for the Great Western Railway Company the sums given by Mr. G. Driver and another surveyor amounted only to 4,615*l.* The award, for the terminus and the railway, was 7,378*l.*

* An interesting search might be made for proofs of a similar practice in England, which was, at an early period, influenced by Byzantine art.

* Treatise of Theophilus, translated by R. Hendrie, Esq. London, 1847. John Murray.—P. xv.

MAGISTRATES AND THE OFFICIAL REFEREES.

MR. ASHBY, builder, having made a projection to a house before the general line of fronts, an information was filed by Mr. D. Roper, the district surveyor, before the referees; who in due time gave their award and certificate that the projection was a nuisance, and should be removed. Mr. Ashby refusing to comply, the district-surveyor went to Mr. Norton, the magistrate at the Lambeth office, to obtain the enforcement of the award; but the magistrate refused to take the award as evidence, and called on Mr. Roper to prove the nuisance, which he very properly refused to do. Mr. Clarkson, on the part of the builder, maintained that the award was not good, and the following conversation took place:—

Mr. Clarkson—If the referees, without having both parties before them, and on the information and evidence supplied by the surveyor, decided upon what is a nuisance, they will very soon be a nuisance themselves.* Besides the production of the certificate of the referees, it is the duty of Mr. Roper to produce to you satisfactory evidence of the fact that the erection complained of is in violation of the Act of Parliament, and not within the exceptions.

Mr. Norton—I apprehend it would be no answer to an action, in the event of my sending the defendant to prison, that I had acted on the certificate. You, Mr. Roper, must therefore prove the nuisance, and I must hear what answer the defendant has to offer before I come to any decision on the case.

Mr. Clarkson—Magistrate after magistrate have declared that they could not understand the Act; and if Mr. Roper will give me the name of one magistrate who has sent a man to gaol under its provisions, I will give up my case.

Mr. Norton—In this case the Act calls on me, in the event of the building he has erected being proved a nuisance, first to call on the defendant to put in sureties to remove the nuisance; and in default of his putting in the required sureties, to commit him to prison. Surely, before I do this, I should have the most satisfactory evidence of the existence of the nuisance.

Mr. Roper—The certificate of the referees is a *prima facie* evidence of the fact, and I presume it rests with the other side to show the contrary.

Mr. Clarkson—I could do so by the testimony of several gentlemen present, if necessary, but I shall not do so, nor will the defendant, if called on, offer any bail to take down the building; on the contrary, he would refuse to do so, and it will be for the magistrate to commit him to prison, if he should think proper, but I feel convinced he will not under an Act of Parliament which all mankind has agreed to be one of the most unintelligible Acts that has ever passed the British legislature. Indeed, the present case abundantly proves its impracticability, for if enforced, the defendant would be placed in this position, that he would have to run the risk of three actions, or go to prison for an indefinite period. The simple facts are these,—the defendant was employed to put a new front to the Stags public-house, and instead of two bow-windows, as formerly, the building was carried straight across on the freehold. The defendant has long finished the job, and therefore, if he presumed to go back now to disturb the erection, he would be liable to three actions, one by the freeholder, another by the lessor, and a third by the sub-lessee, as well as a fourth for trespass, and it would be no justification for him to say that what he had done was in consequence of Mr. Norton having threatened to send him to prison.

After a lengthened discussion, Mr. Norton asked Mr. Roper whether he would go on to prove his complaint by evidence? The latter replied in the negative, and added that he conceived he had complied with all the law required of him; he therefore conceived he was entitled to call on his worship to enforce the law.

Mr. Norton replied that he certainly could not think of acting without sufficient evidence of the existence of the nuisance; and if evidence was not produced, he should not proceed further. He expressed his surprise that in a question of such importance, the surveyors of the different districts of the metropolis did not join and take it into the Queen's Bench for its decision and interpretation of the Act of Parliament.

Mr. Norton's refusal to receive the award as evidence appears to be in direct contravention of the act, the 86th section of which, headed, "Effect of Awards as Evidence," says,—"And be it enacted, with regard to such award, so far as relates to the effect thereof, as evidence of the matter thereof, that if on the trial or hearing of any cause or matter in any court of law or equity or elsewhere, any copy of an award signed and sealed with the seal of the said registrar be produced, then it shall be the duty of all judges, justices, and others, and they are hereby required to receive the same as *prima facie* evidence of the matter therein contained." If the referees' awards cannot be enforced, nay, are to be wholly disregarded, it is quite useless and wasteful for the public to appeal to them. So long, however, as we find their own legal officer taking crotchets into his head, and asserting the *illegality* of their proceedings, in the face of the public, (maintaining, for example, that though they have power to prevent a building owner from making a projection from his front wall, they cannot hinder him from bringing his *whole house forward*, if he please) so long we may avoid being surprised at disregard of them out of doors.

* The district-surveyor proved that Mr. Ashby and his architect attended the first hearing, and that his solicitor attended the second.

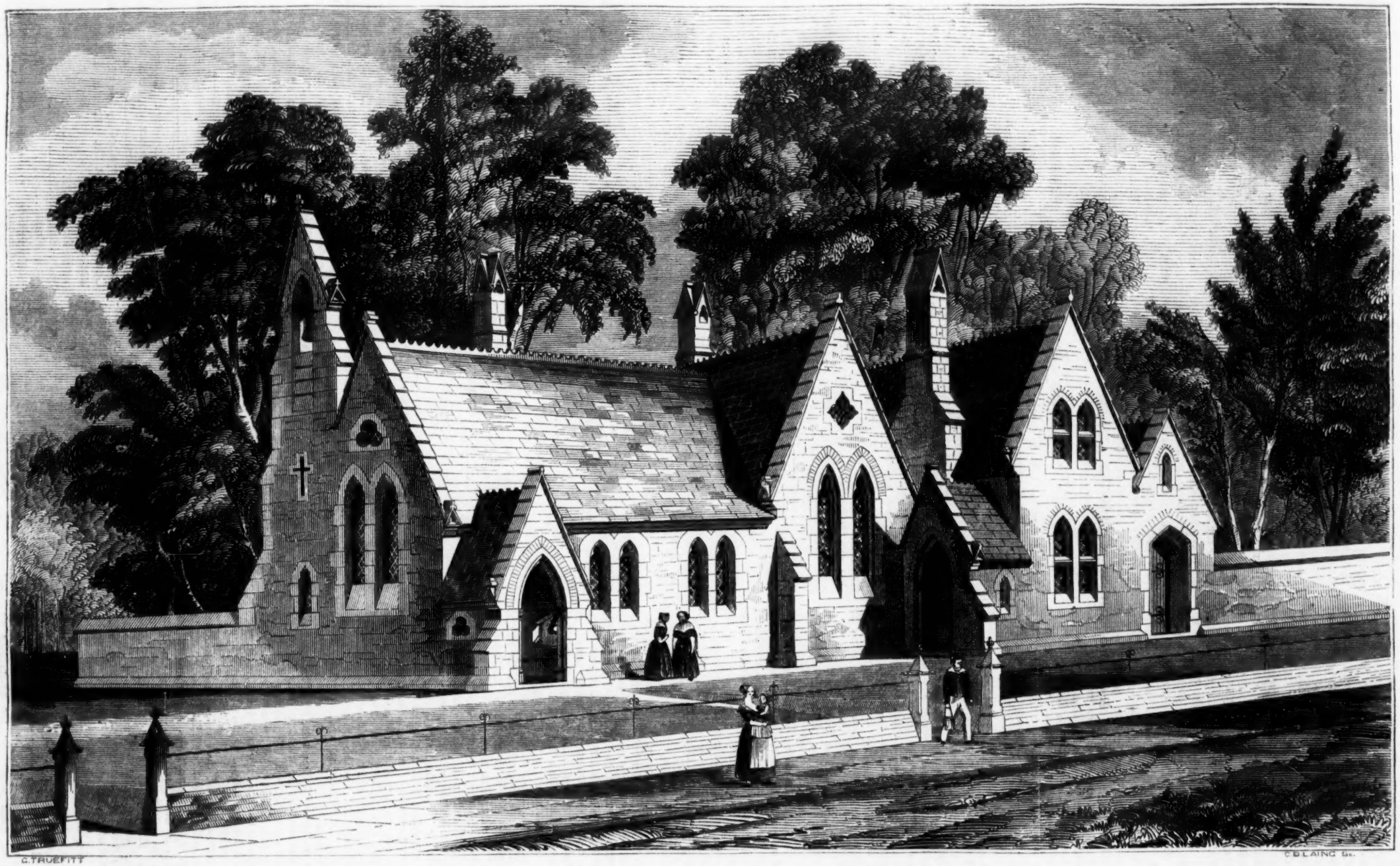
RAILWAY JOTTINGS.

IN a case at law as to the boring of the tunnel under a street in Liverpool, for the Manchester, South Junction, and Altrincham line, it has been decided by the Barons of Exchequer, that it is not sufficient to offer compensation to the owner of land on boring under his property, unless the offer be made previous to the trespass. The defendants had argued, that the owner's only redress was under the provisions of the Lands' Clauses Consolidation Act, the 8 & 9 Vict. c. 18, ss. 18 and 84, by summoning a jury to assess the compensation due. For the plaintiff it was responded, that the Railway Clauses Consolidation Act, and the 8 Vict. c. 20, also affected the question, in conjunction with the Act referred to by the defendants.——The sheriff-substitute of Edinburgh has decided that passengers whom companies, by the usual ticket, have contracted to forward by train, are entitled either to damages for delay if not so forwarded, or to forward themselves, at the company's expense, by any available conveyance, failing the train contracted for.——We lately began to give railway directors some little credit for an earnest desire, at length, to respond to the public outcry for means of safety in railway transit; but we now fear it betokened little else than a mere sagacious desire to sail with the current only through the rapids, and to whisk out of its eddy at the earliest opportunity; for little or nothing further seems to have been done to obviate the continual peril in which the public find themselves involved so soon as they put their foot into a railway carriage. Yet it so happens, in the new occasion which calls forth our present remarks, that the Company on whose line the danger manifested itself is one of those very few who have really done any thing to obviate such dangers. That little which they have done, however, is proved in this very instance to have been as insufficient as it was anticipated that it would be. The 'travelling porter' on the Great Western, whose duty it is expressly to look out for accidents, was lately found to be deaf, blind, and insensible (from the power of cold in his sedentary state it might be), to the hence futile and useless signals of distress made by the equally sedentary and probably almost equally benumbed and incapable guard, in circumstances of most imminent peril to an express train, arising from the fracture of a wheel tire (a frequent source of accident); thus affording another negative proof, if other proof there need be, of the efficacy, under almost all imaginable circumstances, of our own simple suggestion to convert one side or both of the footboards along a train, or even the centre of the carriages opening through one another, into a safe and ready walk or beat for the guards, who could thus effectually communicate at all times with each other and with the driver, while their physical and mental faculties would thus, too, be kept by constant movement, especially in very cold or even in very hot weather, in a state of active watchfulness and alacrity, becoming a vigilant guard, such as this 'travelling *porter*,'—stupidly so called—clearly and especially ought to be. In the case in question every endeavour to make signals of use was unavailable, and the train sped on for miles, until it stopped, as it most fortunately required to do, at a station ten miles from the spot where the accident occurred.——The Conway tubular bridge has been so far tested by its weight which it is said to support with a defection of seven-eighths of an inch out of the level along the bottom. To effect this two temporary pillars were constructed under its extremities, and the wooden supports, to the length of 400 feet, removed. We wait to hear from our own correspondent on the subject.——A Devonshire correspondent again forces our attention on the working of the atmospheric line, of which, however, we have ourselves been by no means unobservant, especially during the continuance of winter and frost. That great speed with comparative safety and smoothness of transit, may be attained, as indeed it has been, and *is being* attained, by the atmospheric, we do not doubt, and the evidence presented by our correspondent supports us in our belief of these advantages, but the very same evidence also supports us in our fear of its disadvantages during the occurrence of frost, which, even in the present winter, temporarily stopped proceedings so soon as the frost set in, and which, we observe, is still occasioning the like inconvenience. We are glad to perceive, however, that the substitution of a sufficient quantity of steam passed through the interior of the tube for a length of time early in the morning, in place of the inventor's contrivance of passing a heater over the valve in travelling, is promotive of greater regularity than heretofore, unless when not sufficiently attended to at an early enough hour before the morning trains set off. These irregularities, however, which have even very recently led to the South Devon being dubbed 'the asthmatic railway,' must now be comparatively few, as a correspondent of the *Devonport Telegraph*, who writes from Newton, says that the trains are despatched and arrive with the greatest regularity, and from the great traffic on the line there are now sixteen or seventeen trains daily. The locomotive, he adds, is entirely off the line between Exeter and Newton. The arrival of the trains is looked at with much wonder by the sightseer, and the old locomotive is beginning to be looked at as an extinct race of by-gone generations. Our own correspondent remarks, that so easy is the atmospheric in comparison with the old mode, that but for the testimony of his watch he should not have believed that he had been occasionally conveyed at the rate of seventy miles an hour. The permanent way is laid continuously from Totness through the Marley tunnel, and the viaduct at Erme is being altered for additional security. The station arrangements at Laira, near Plymouth, are in rapid progress, and the opening of the line throughout depends entirely on the completion of the viaducts.——The engineers and workmen on the Chester and Shrewsbury line have met with a slough at Barchurch, into which they have been 'heaping Pelion on Ossa,' in the hope of filling it up, or for the purpose of fathoming its depth perhaps, though rather an expensive way of doing what a little previous boring might have sooner and more cheaply convinced all interested either of the hopelessness of doing, or at least of the quantity of the more bulky material likely to be requisite. As it was, above fifty yards of the substratum disappeared, and, after all, the method so often in former cases recommended by us, and successfully adopted, in all but shallow swamps, has been resorted to, in the construction of a conglomerate surface of faggot and furze on which to lay the more immediate substratum of the line.

BLIND BUILDERS.—Sir: I beg leave to hand you a list of tenders delivered for repairs to two houses in Baldwyn's-gardens, Islington, which where opened by the surveyor (Mr. Charles Foster), in the presence of the contractors. ONE OF THEM.

Pickford	£ 273 0
Bugg	268 0
Brake	255 10
Newman	136 0
Lloyd	120 0
Hodges	93 0
Bowley	89 0

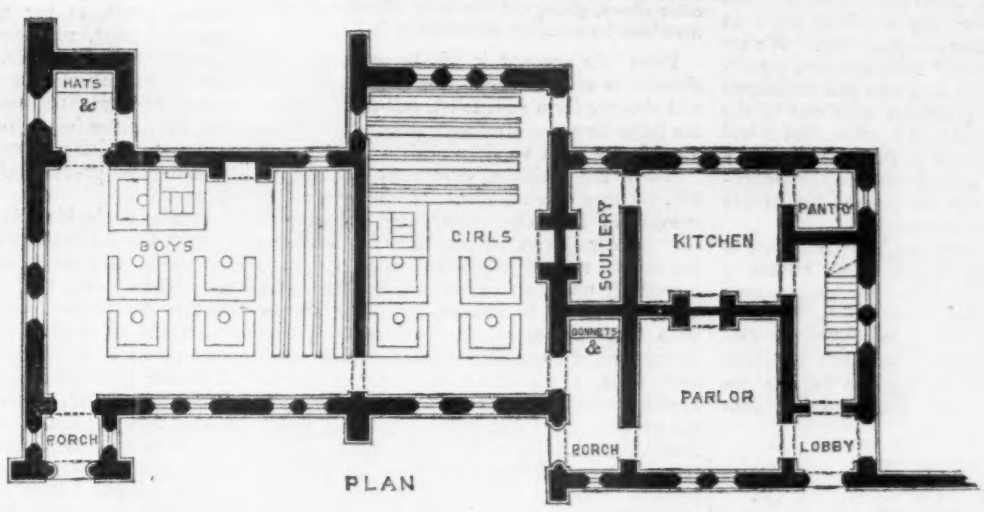
*** Blind builders indeed? It ought to be "*mad* builders."



C. TRUEFITT C. D. LAING Lt.

DESIGN FOR PAROCHIAL SCHOOLS AND RESIDENCE.——MR. KENDALL, JUN., ARCHITECT.

PLAN OF SCHOOLS AND RESIDENCE.



SCHOOLS AND SCHOOL-HOUSES.

Mr. H. E. KENDALL, jun., has recently published a very pretty volume of designs, for parochial and national schools, which is ushered into the world with all the advantages of nice drawing, showy effects, and tasteful borders.* It comprises plans, elevations, and perspective views of seven schools which have been erected (namely, the Childerditch School; Poor Boys' School, Bury St. Edmund's; Commercial School at same place; Poor Girls' School also at same place; the Battle and Langton Schools; Willesden School; and Stanmore School); and five designs similarly set forth, but not carried out. They are medieval and Elizabethan in design, some in stone, and some half timbered; and though two or three of them may be open to cavil, on the ground that they present a mixed character, they all display much skill in arrangement and considerable fancy.

With Mr. Kendall's concurrence, we have copied what we consider the best design in the book, an unexecuted project of Early English character, uniting the schools and master's house. It purports to give accommodation to 130 boys and 110 girls, and to be constructed of Kentish rag, with tooled ashlar dressings: the cost is estimated at 720*l.*, exclusive of seats and desks.

We look upon this book as a well-timed volume, and trust it will have the effect of leading other architects to publish designs, to counteract the effects of the melancholy exemplars put forth by a former "Committee of Privy Council on Education."

Our author says, in his introduction,—"With the present zeal on the part not only of the Government and the clergy, but also of the enlightened public, in promoting the great cause of education, it must be evident that a noble opportunity for the exhibition of national architecture, and for contributing to its general diffusion, now presents itself; and it is especially incumbent on all members of the profession, by the exercise of taste and judgment, to give character to school buildings of all descriptions. Much may be done by reference to old works, by picturesqueness of outlines, by harmony of composition, and by the judicious application of various materials, however common in themselves. Something of external comeliness should be assigned as a matter of course to the humblest of such erections: under the direction of good taste, usefulness of purpose, and beauty of design, may be made mutually to subserve each other, even when the latter is but a secondary consideration.

It is a common error, and one not confined to the uneducated classes, to suppose that beauty of design must necessarily be more expensive than deformity or plainness, and the error is lamentably obvious in the number of mean structures abounding throughout the country, alike deficient in design and execution; it is quantity of material, and not the form of its application, judicious or otherwise, that induces expense."

The aforesaid committee of Privy Council, and a certain off-hand gentleman, who seemed to rule them, and made architects chop about their designs to suit his notions of taste, and may do so now, for what we know to the contrary, have much to answer for in this respect.

* Designs for Schools and School-houses, parochial and national. By H. E. Kendall, jun., F.S.A. John Williams and Co., 141, Strand.

GAS IN GUERNSEY.

AN INSTRUCTIVE INSTANCE.

EXTREME causes may be expected to display such extreme effects as will betray their own covert specific operation, even in other circumstances less extreme. We have always maintained, and indeed it is but common sense to maintain, that the excessive price which an overweening sense of self-interest too often tempts or impels a monopolist to demand for his goods, in general constitutes the most inimical obstacle to the promotion of his own best interests; and that, on the contrary, the lowest figure at which a profit can be turned at all on articles adapted to an extensive and universal consumpt, is that very figure which will not only immeasurably expand a comparatively limited demand, but as immensely increase the gross amount of profit, and promote the sterling interest of the enterprising manufacturer. It unfortunately happens, however, that the eyes of self-interest are but too often blind to the *possibility* of a lower price paying while a higher barely pays, or fails to pay at all. But in the history of the gas movement we have actually seen a Company, such as the Sunderland, declaring that a reduction of the charge for a street lamp from 45s. to 35s. "could not possibly pay," while competition subsequently proved that even 15s. could and did pay! It is not our object at present, however, to enlarge on this particular topic. We merely desire to point attention to one of the inevitable *consequences* of a *high* price, consequences which, after such exposures as those at Sunderland, Liverpool, and elsewhere, we hope no longer to find subverted into *occasions* for resisting immense reductions beneficial to all, as those at Sunderland, Liverpool, and elsewhere have been.

The gas made in Guernsey is charged at the enormous and unsaleable rate of 12s. per 1,000 cubic feet, and what is the *consequence?* That in a locality possessing a town-parish population of 16,000 to 17,000, gas is so expensive a luxury that not even the streets are lighted! and that the shopkeepers even, with pipes and apparatus for it up in their premises, can only afford to light their shops with it on a Saturday evening! To be without a gas-work in these days of enlightenment is to be in a very primitive state indeed—but to have a gas-work, and still to be in the same primitive state, shews there must be something radically wrong. The only matter of astonishment here, however, is the utter blindness of the gas proprietor to his own interest. Doubtless his argument is this—why, even 12s. scarcely *pay* me, how then can I reduce, without a positive loss, especially with a population who only use it of a Saturday night, or not at all, even in their streets? a topsy-turvy argument indeed! Who doubts, but him who is thus blinded by an overweening sense of selfish interest, that the denizens of the Guernsey gas dominions have enough of taste for the luxury which their administration taxes so unconscionably, and sufficient inclination to make use of it even to profusion? Now that other great sovereigns have come to see the increased advantage, to the revenue itself no less than to the comfort and contentment of the people, in reducing arbitrary and indefinite taxage on articles suitable for popular or universal luxury or every day necessity and use, we certainly are astonished to find this enlightner (?) of an otherwise untaxed isle in the very vortex of surrounding civilization, thus standing in his own light no less than in the light of his constituents—injuring his own interests, in short, and the interests and convenience of others, no less assuredly than if he were to order the guardians of the stop-cock of his own main pipe to turn the article of consumption *all but off* every evening, at the very time while every shopkeeper or householder *waited* with his lighted match *ready to begin* that consumpt which the establishment of his own works might have otherwise induced the belief that he too desired to see in full and unrestricted progress.

Let our own metropolitan companies and many others take warning, and be enlightened by an instructive case like this. True, few now charge such a monstrous price for gas as 12s. per 1,000 feet; and as to our own companies, they are at length giving way a little to the influence of the pressure from without, but let all remember, that gas is a light that can well and easily be adapted for truly universal use, *that as yet not a tithe of that universality has been any where reached*, and that it can and will be effected only by a tempting reduction of the expense of it, which will not only place it within the reach, but force it, as it were, into the very hands, of ALL—even of the poorest and most humble. And besides, they ought to know, or at all events now let them learn from the greater and more extreme and positive folly of one of their class, that the lesser or more negative folly of their own, when multiplied by their own immensely greater field of diffusion, amounts to a folly in the aggregate, vastly greater than even the instructive one in question.

As to the Guernsey gas proprietor himself,—a resident in our own metropolis, as we happen to know,—it is hoped that ere long, if not now, he will open his eyes, at least, to his own pecuniary interest. And if not, we are well assured by the Guernsey *Sun*, while calling the

attention of the Guernsey gas consumers—or would-be gas consumers rather—to our own disinterested efforts in the cause of the gas movement, "that if he do not reduce the price to something nearer the standard price in England, some other company will. We are personally acquainted," adds the *Sun*, significantly, "with a gentleman who has exchanged several letters on this subject with one of the most wealthy companies in London, and it will only require the support of the gas-consumers here to establish a branch company in Guernsey, that will engage to supply the article at 7*s*."

On our own part, we too have occasion to know, from appeals to our future efforts in their cause, that the Guernsey people only await such a reduction, with which, it would appear, they would be, at least for the present, perfectly contented; but that otherwise they are determined to "agitate for the gas movement," in which we shall certainly support them to the utmost.

CHLORINE AS A DEODORIZER OR DETOXICANT.

Though jealously setting our faces against the substitution of even the most consummate deodorizer in place of a system of regular and periodical cleansing, whether of cesspools or drains, we deem it a matter of scarcely less moment, now that there may be said to be the commencement made of what we hope will prove to be a general and thorough scouring of our towns and cities, to insist, impressively, upon the safety, nay, the extreme desirableness, of mollifying and sweetening that general 'commotion' which *Punch* so graphically describes, by aid of the best and cheapest or most plentiful deodorizers; otherwise, the stirring up of so much rank corruption all at once and at this critical moment, may prove to be an evil worse than even that deadly one, the virulence of which it is the main and more immediate object of all to obviate. And in one form or other, let us here observe, that wonderful agent, chlorine, has been proved to be as pre-eminent a deodorizer, as it has long been known to be a bleacher. Somehow or other, its very office seems to be to root out corruption and all uncleanness. It is to this agent alone that the power of common salt to preserve animal matter from corruption must be attributed. It is to this agent under the form of chloride of lime that bleachers are so much indebted. It is to this agent under the form of chloride of lime itself, or chloride of zinc, or of some other more or less suitable metallic or other base, that medical men and others mainly trust for the prevention of infection in fevers, &c., and it is not a little remarkable that the next best agency perhaps in the latter case, viz., camphor, is a substance extremely analogous to one of those peculiarly vegetable substances which chlorine itself has been found to be capable of forming. In short, if an *enlightened* heathen devotee, if such there could be, were anxious to select a suitable incense to Æsculapius, he would unquestionably cause this sunny spirit, morning, noon, and evening, to ascend, in its pale but warm tinted cloud or vapour, as a *sweet-smelling* savour to the god of health. And in truth even sweet-smelling we uphold it to be, although its pungency has led it to be classed with stinking odours, and its analogue bromine, with an odour very much the same, to be even stigmatized with the *name* of stench (bromine) to which both it and chlorine are antagonists so inveterate and *extreme* as thus to *meet* them, as it were, upon their own vile ground.

A new form under which chlorine has recently appeared as a deodorizer seems to merit notice. We will here present the *Manchester Guardian's* account of it:—

"A discovery, which promises to be of great value, has just been announced by Mr. Young, a chemist in Manchester, who has generously imparted it to the public. Many substances have been used for the purpose of removing the offensive odour of night-soil and other decomposing matter, but to all those commonly in use some objection may be urged. Some, such as chlorine and sulphurous acid, along with the unpleasant smell, destroy the fertilizing properties; others, such as nitrate of lead and chloride of zinc, are expensive; but the one now proposed is free from either objection. The new deodorizer is an abundant waste product from the manufacture of chlorine; it consists principally of a solution of chloride of manganese, with a variable quantity of chloride of iron, and generally a little hydrochloric acid and free chlorine. Cesspools, and other places, giving out the most offensive odours, have been immediately sweetened by it."

From this account it will be perceived that chlorine is still the deodorizer even in the new and cheaper form suggested, and even though the latter be contrasted with the former. That a substance such as chlorine in any form will "destroy the fertilizing properties" of night-soil, we very much doubt. Indeed, when it is considered that one *remarkable* property of chlorine consists in its capability of absorbing the actinic ray of the solar light which so powerfully promotes vegetation, and that salt is now admitted to possess fertilizing powers to a singular extent, the probability is that in any form of combination (for except in some such form, a gas like it can scarcely ever be applied to such a purpose) it will in itself turn out to be a most important fertilizing agent. And the probability of this will perhaps appear more clearly still when we keep in view the peculiar tendency of chlorine, in its usual form of acid agency, the muriatic, to dissolve—peculiarly and emphatically to dissolve—such stony, earthy, or oxygenous substances as lime, red ochre, clay, &c., and in its elementary form to subtilize and even to volatilize such fixed and persistent bases as that of iron, or even of flint or silex, namely, silicon. Indeed, to form solvent and even deliquescent substances out of the most insoluble, and subtle and even volatile substances out of the grossest and most fixed, are striking and general peculiarities of chlorine and the other halogens. And the knowledge of its wonderful properties is even yet but in its infancy. Witness the extraordinary joint influence of it on the animal life itself, so recently discovered, viz., in the form of chloroform or terchloride of formyle, as used by Dr. Simpson, Professor of Medicine in the University of Edinburgh, and who has successfully employed it in the obviation of the most grievous ills to which human flesh, and especially its more delicate moiety, has hitherto been heir. Its use in the cure of cholera itself and other diseases need not be despaired of. But we admit that we are probably deviating a little out of the straight path of our own more limited and proper province. We were only anxious to insure the favourable attention of our readers and the public in general towards chlorine as a sanitary agent, and if we have succeeded in doing that, our purpose is accomplished.

USE OF PLASTER OF PARIS IN ENGLAND.

The stone which is used in England, and brought from the north, is sulphate of lime, and has scarcely any acid qualities in it; it is, in fact, an imperfect alabaster; and the bad quality of this stone, and the high price, prevent its being used in building matters so much as it otherwise might be, and cause little interest to be taken in the improvement of its manufacture.

In France, on the contrary—where the stone is in great quantity and of the best quality—the consumption in Paris is more than 1,000 tons per diem, and yet other materials abound and can be had as cheap.

The analysed parts of this stone are, after Mr. Darcet—

Sulphate of lime	78·5
Carbonate	15·7
Water of chrystalization	5·8
	100·

A short time ago Mr. J. Delasseux, of Rouen, by his perseverance gained a great step towards its improvement, inasmuch, as by his process he does not alter the nature of the stone nor the chemical qualities: he manufactures at the cheapest rate a material that, though it has the appearance of English plaster, has moreover the qualities of strength and durability, which I shall beg to call your attention to presently.

If I were to erect a kiln at Greenwich, I could sell, *with a large profit*, plaster of the best quality at 30*s*. to 35*s*. per ton; and I think that a material of good quality, sold at this price—which permits to build quickly, solidly, and at a cheap rate, and also combines healthiness, elegance, and comfort — cannot fail to meet the most sanguine expectations of the public: in fact, this plaster, which sets in a few hours, may be employed for constructing and cementing a wall of bricks, partitions for apartments *solid*, iron floors, ceilings, rendering on walls, forming chimney-flues *in blocks*, bedding stones, and exterior and interior decorations. These statements are not theoretical, as for a long time the plaster has been generally employed in France, and the enormous quantity that the trade exports proves that the material is much appreciated.

Professor Hosking, in his new publication, "Guide for the Regulation of Buildings," &c., has sufficiently dwelt upon the value of the material to prove, that in England its introduction should be considered as a useful thing, and would be of great utility in construction.

In practice, the following are the quantities of plaster (as used in Paris) requisite for different works, and, calculating that the plaster sold at 30*s*. per ton, it will be easily seen that my statement is correct, when I say that nothing can oppose its general use.

One ton and a third of plaster to a rod of brickwork, in powder, will cost 2*l*.

	Of plaster yer yard super.
Rendering on walls, requires	36lb.
On ceilings	42lb.
On quarter partitions	40lb.
Filling up (or pugging) between joists	60lb.
Outside decorations (elaborate mouldings, &c.)	70lb.

The window openings not to be deducted.

Besides this, I must observe, that mixing plaster with sand, in equal parts, makes a good mortar, which sets quickly, and is not dearer than common mortar.

In a country like England, and especially in London, where the ground does not belong to the party building, I have considered it important to introduce a material which embraces economy as well as incombustibility (so important in a city as London), and, moreover, excludes exterior humidity, and preserves interior warmth, and its hardness precludes the possibility of vermin penetrating—a great advantage over the plaster in which hair is mixed. Another advantage is, that, from the rapidity with which the plaster sets, the house may be inhabited immediately, thereby at once receiving interest for the outlay, instead of waiting three or four months, or longer, as is necessary with common mortar.

I have had some objections made as to the difference of climate, but without any cause. At Rouen, the dampest town of France, and where it rains seven months in the year, all the buildings are in plaster, and I am sure that, in using hard stone for making dry plaster in England, it will resist the variations of the atmosphere as well as Roman cement.—I am, Sir, &c.,

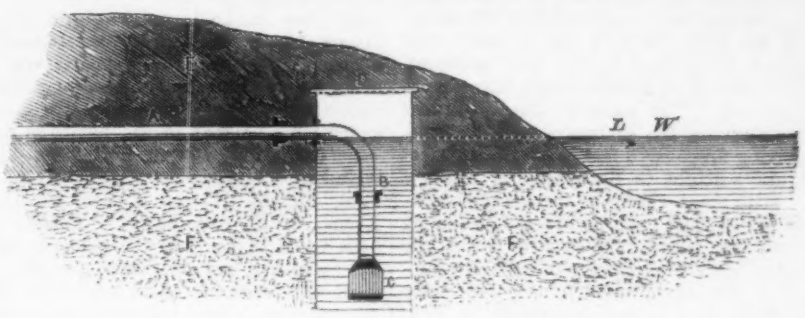
Victor Delassaux, Architect.
January, 1848, No. 1, Norfolk-street, Strand.

Workmen at the Houses of Parliament.—There are at present 1,399 men engaged upon the works of the New Palace, of which number 776 are employed at the building, 120 at the quarries, 335 at the Government works at Thames-bank, upon the joiner's works and wood carvings, and 168 upon miscellaneous works, both at the building and elsewhere. The aggregate amount now expended on the new Houses of Parliament, inclusive of lands, houses, rents, &c., and razing as well as building, temporary erections as well as permanent, is 1,066,561*l*.: the original estimate in 1837 was 707,104*l*.

Green Slates.—Sir: You mentioned in The Builder of February 5 (Notices to Correspondents), that the green slates came from Westmoreland. Many of those now used come from the Bryn Hafod-y-wern Quarry, which is worked by the Royal Bangor Slate Company, and is situate midway between the Pennant Quarries and the little village of Abor, near to Bangor. That procured in Westmoreland is more of the nature of shale, very heavy, and is more like thick laminated grey stone. Nevertheless, for want of better, many of the government buildings were formerly covered with this Westmoreland shale, or slate, as the expense of the necessary timber to support the weight was not a consideration.

Bankside. M. Stuteley.

FILTER FOR THAMES WATER.



PLAN FOR FILTERING THAMES WATER.

WE are indebted for the following communication to Mr. Thomas Wicksteed, the engineer, to whom it was originally addressed. The plan is simple, and would of course be applicable to other streams.

Sir,—I beg to inclose a sketch of the plan I have adopted to obtain a supply of clear or filtered water, at all times of the tide, for the use of a steam-engine on the bank of the river Thames, and which I hope will be sufficiently explanatory.

A is the suction-pipe leading to the engine, about 600 feet in length.

B is a cylinder, sunk within about 25 feet of low-water mark.

C is a common rose head on the end of suction-pipe.

D is a close cover on the top of the cylinder.

E. Mud and gravel.

F. Clean sand and gravel, which forms the filtering medium.

After clearing out about 4 feet of mud, peat, &c., we got into loose shingle, and at the depth shewn it is sand and gravel, which admits a very great quantity of *perfectly clear or filtered water*, and which I think scarcely possible to exhaust by ordinary means; at all events we had two engines at work on the suction of Messrs. Blackett's saw-mills, Bankside, with hand pumps also, and could not lower the water in the cylinder at low-water. I had the same result at Sir John Rennie's, and I have no doubt an unlimited quantity of water may be obtained by having a greater surface in the cylinder or well. JOHN AIRD.

Thames-street, Greenwich, Jan. 24, 1848.

PREVENTION OF ROT.

SIR,—The recommendations in the late number of THE BUILDER are very good, as they go to the total removal of the cause: but the following plan succeeded with the smallest cost, by insulating the house from the wet below.

It was devised above twenty years back, by a gentleman who possessed two houses in Stamford-street, where the wet crept up the walls and destroyed every thing against them to a considerable height.

He provided a sufficient number of parallel slates to extend all round the two houses; they were longer than the thickness of the walls, and square-edged to fit close together; then below the floor, but higher than any water could ever reach, he passed a thick saw into the mortar and quite through the wall, and as this advanced he inserted the slates with cement all round the two houses and their parting walls; literally sawing the houses from their foundations, and inserting a layer of slates, through which it is known water or damp cannot pass.

This sufficiently cured the mischief, and the walls kept dry ever after.

In another case, forty years ago, in a house at Paddington, where there was not sufficient means of drainage, the land-springs frequently flooded the kitchen floors. My friend had a well dug under the wall between the two kitchens, and put a pump there, and removed the soft water pipe and cistern into the yard at the back of the house, purposely to render access to the pump the most convenient, consequently it was so much used as to keep the house and floors quite dry. He always found the surface in the well much lower than the kitchen floors, even in the worst weather.

I will mention a third plan, used in a house where the stone floor was not flooded, but always damp.

The stones were taken up, and the earth made level and covered with sand. Over this, and close up to the walls, two layers of strong *brown paper dipped in tar* were laid so as to overlap and break joint; this was well covered with sand, and the stones relaid, and they kept dry.—I am, Sir, &c.,

CORNELIUS VARLEY.

Charles-street, Clarendon-square,
January 26, 1848.

SCULPTURED *versus* PAINTED DECORATIONS.

THE discussions at the Decorative Art Society, which followed the paper on theatrical decoration, mentioned in our last number but one, turned on the respective properties of relievo forms and ornamental painting. Mr. Whitelaw, a member, said painting could exhibit landscapes and similar effects, which do not come within the scope of sculptured limits, but sculpture would be found superior to painting in many cases, from its admitting of being distinctly seen from every point of view; and, further, as it is capable of producing stronger impressions on the mind. He noticed objections which had been offered respecting the thickness sometimes evident in the composition of relievo forms, and which he argued are ill-founded, for it should be remembered that, while objects in nature have a transparent medium, ornament is ordinarily required to act reflectingly, by so exaggerating light, and reducing shadow within itself, as to produce an intended effect. An anecdote from Pliny, respecting the Athenian Minerva, was related in illustration of this view, and the modern application of stamped brass, was named as being usually objectionable in effect, owing to the thinness of the metal, although it is not thinner than leaves, and many natural objects imitated therein. He concluded by observing, that painting and sculpture have each their appropriate localities, but he considered ornamental painting to be subordinate in importance and grandeur to sculpture.

Other members contended that relievo has more of reality in its effect, and, at all times, stronger illusive properties than painting. The practice of painting relievo and sculpture white, was disapproved of by some, but sculpture composed of differently coloured marbles, was not to be recommended, although it was suggested that sculpture coloured after nature, would produce effects which painting on the flat could never equal. References were made upon this point to the Nimroud marbles, on which a kind of enamel remains upon the eyes of horses and men, as shewing an ancient practice.

Mr. Laugher observed, that the result alluded to respecting the use and effect of stamped brass, is entirely caused by the condition of light in which it is usually placed, as is evident from the pleasing effect of artificial flowers which are generally seen in a diffused light. Mr. Dwyer contended, that in spacious rooms massive forms are essential, and that, therefore, in Whitehall Chapel, relievo would have been in better taste than Rubens' painted ceiling; that in the Chapel Royal, St. James's, Holbein's ceiling is importantly assisted by the projecting ribwork and bosses, and that a painted imitation of such structural relievo-forms would be especially objectionable upon ceilings. It was ultimately agreed that sculpture and painting ought to be used more frequently together, having a regard to a proper relation of subordinate parts.

THE LATE WESTMINSTER COMMISSION OF SEWERS.

SIR,—I should not wish to take any notice of the attack made upon my character by Mr. Donaldson, in your paper of the week before last, as any man of ordinary feeling can imagine, that it refers to a subject which I would not willingly enter upon. But as a surveyor of the Metropolitan Commissioners of Sewers, I feel that some explanation is due to the public; and I will now only inclose three letters, without note or comment, leaving your readers to draw their own inference as to the attack made upon me by one who attended the court at which the last letter was read.—I am, &c.

Feb. 3, 1848. JOHN PHILLIPS.

(*Copies.*)

25th November, 1846.

"SIR,—Understanding that it is your intention to employ a near relative of mine upon the works to the sewers in Grosvenor-square and neighbourhood, I think it right to inform you that, in my opinion, such a course is scarcely consistent with my position at this office.

You may suppose that by so doing, you are conferring a favour upon me, and I thank you for good intentions; but my impression is that you may thus afford opportunity to ill-disposed persons to make invidious and ill-natured remarks equally undeserved by you as by myself.

Do not suppose that I am attempting unduly to interfere with, or control your arrangements, but I offer you these remarks in the most friendly spirit: you, of course, can act as you think proper.

I am, &c.,

(Signed) JOHN PHILLIPS, Surveyor.

Mr. James Starkey."

"14th December, 1846.

"SIR,—I have repeatedly requested you not to employ my relatives on the works of the Westminster sewers; and I have just been informed by a commissioner that it has been reported to him that you are, at my request, employing them, and that in consequence I am allowing improper work to be done.

Such reports and statements are extremely annoying to me, and I feel it to be my duty, as the surveyor to this court, again to urge upon you, to the fullest extent of my authority, the absolute necessity of your *immediately ceasing to employ them on any works connected with this office.*

(Signed) J. P.

Mr. James Starkey."

Extract from the Orders of Court, 18th December, 1846, vol. 47, p. 428.

A letter, as follows, was read:—

"28, Vincent-street, Westminster,
15th December, 1846.

"Gentlemen,—Having an extensive contract under your commission, which I am now executing, I have in my employ a bricklayer who is related to your surveyor. I have upon two occasions received a note from him desiring me to discharge him, and not employ him upon any works connected with this commission; but I have not done so, for I cannot conceive what right or authority any one has to interfere with those I employ as long as they execute the works to the satisfaction of those who may please to employ me; if any thing can be proved where he has not done so, I will immediately dismiss him. I must beg of your honourable court to bear in mind that I employed this person long before I knew there was such an individual as Mr. John Phillips (your surveyor) in existence. On whatever works I may have the honour of being employed by you, my object always has been, and ever will be, to execute them in a sound and efficient manner, but I must, at the same time, most respectfully reserve to myself the right of employing whom I please.—I am, &c.,

(Signed) JAMES STARKEY.

Ordered that the said letter do lie on the table.

A NEW WORKHOUSE FOR ST. PANCRAS is to be erected at a proposed cost of 6,000*l.*, to be defrayed by a rate for the purpose.

ARTIFICIAL STONE.

INSTITUTION OF CIVIL ENGINEERS.

AT a meeting of the institution on the 1st instant, Mr. Joshua Field, the new president, took the chair, and congratulating himself as being the first president elected from among the mechanical engineers, delivered a very interesting address, which the meeting requested might be printed.

The discussion was then resumed upon a paper recently read on the manufacture of artificial stone; the Dean of Westminster, Sir Henry De la Beche, Mr. Barry, and other visitors, taking part in it, with the principal members of the institution.

The remarks turned chiefly upon the chemical and physical properties of the material, and the cost of its production in the moulded form as compared with that of carved stone. In its chemical properties it was asserted to be at least equal in purity to the productions of nature, for on the statements of the eminent chemists who had subjected it to severe tests, it was said to be totally insoluble in boiling water, however long immersed, and also to be capable of resisting the action of mineral acids. In this respect it differed from glass, which always yielded a portion of its alkali to the action of water. It was further stated, that it had perfectly resisted the action of frost, vases filled with water having been repeatedly frozen without their sustaining any injury. Statements were adduced as to its strength, and other physical properties, and some very interesting remarks were made on the subject, comparing the substance produced artificially with certain sandstones found in this country, which, by the action of compression and heat, had attained a degree of hardness equal to quartz. It was said that experiments made on the strength of the artificial stone proved it to be superior to those natural stones with which it had been tested, viz., Caen, Bath, York, or Portland stone; but of these we should require to know more before expressing our opinion. The price of the material was stated to be such as to render it available for all useful and ornamental purposes.

New Books.

A Practical Treatise on Ventilation. By MORRILL WYMAN. John Chapman, Strand; Munroe and Dennett, Boston.

"*Plures occidit aer quam gladius,*" says Mr. Wyman truly on his title-page, as we have said again and again for years, with many earnest fellow-labourers; and, gathered facts having every where confirmed it, a respectable minority of the community are fully satisfied that the air we breathe *does* kill more than the sword, and are anxiously looking for the means of obtaining it in our houses, schools, churches, and meeting-halls, in a purer state, and in more abundant quantity than it has been heretofore found. The book before us will help them in the important search, shewing the principles of ventilation that are established, and offering many suggestions towards the desired end worthy of consideration. In America Mr. Wyman's treatise is well known, and we have before now quoted portions of it: we think it due to the work, however, to aid in further extending a knowledge of the treatise in England by a distinct recommendation of it to our readers.

In respect of public buildings, our author justly points out that it is as important the plan for warming and ventilating should be determined upon before the construction is commenced, as for lighting and entrances.

"Architects seem entirely to forget that any such arrangements beyond an ordinary fireplace, are required. It is but a short time since an advertisement appeared for proposals for warming and ventilating the new Customhouse at Boston, not only after the plans were adopted, but after the building was completed. Any plan which can be devised for such a building, and which can be introduced without any considerable expense, must be far from satisfactory in its operation. The architect should design and build not only with regard to beauty and convenience, but to health and comfort also. This he cannot do unless he possesses a clear conception from the beginning of the means by which these several objects are to be accomplished."

Those who question the importance of ventilation because our forefathers lived to a good old age without even understanding the meaning of the term, he bids call to mind their fire-places, the kind of houses they occupied, and the quantity of air which must have passed through them. "In some of the old houses in New England the chimneys are still standing, having fireplaces 8 feet in length by 3 feet deep, and a height to the mantel of nearly 4 feet. With these chimneys the draught occasioned by the large quantity of wood consumed was such that, without the *settle* to protect the back from the strong current of cold air pouring in at the doors and windows, and retain the radiant heat, it was impossible to keep comfortably warm.

From these large, open-throated chimneys there has been a gradual diminution, until the space for the escape of smoke, as now formed for anthracite coal grates, is seldom more than 12 or 14 inches long by 3 inches wide. By these improvements the escape of heat by the chimney has been constantly diminishing, and the amount of radiant heat, which in such fireplaces is mainly depended upon for warming, remains as great, if it is not increased; but the ventilation has been greatly diminished."

Mr. Wyman's work contains a large amount of information, conveyed in a clear and intelligible manner.

An Essay on the Air-pump and Atmospheric Railway. By W. TURNBULL. Williams and Co., Strand.

THERE are some men who work all their lives to make the reputation of others, and, from circumstances which we will not venture to examine (in many cases, doubtless, their own fault), derive little personal advantage or advancement from their labours. William Turnbull appears to be one of these: he is known by a "Treatise on the Strength of Cast-iron," and some other minor productions; but the greater part of his life has been spent in mathematical investigations, which pass current as the work of others.

The object of the little book before us, just now published in his own name, is the investigation of the principles of the air-pump, and their application to the propulsion of trains on a railway, suggested, it would seem, by Mr. Robert Stephenson's report on the atmospheric system. It gives formulæ and rules for calculating the various quantities contained in that report, and, shewing some trifling errors in Mr. Stephenson's figures, which tell against the system, takes a more favourable view of it, and claims for it impartial and patient investigation. The writer describes the improvements made by Clarke and Varley, and speaks favourably of the result. We recommend the work to the attention of those who are interested in the question of propulsion on railways.

Correspondence.

SELF-ACTING EFFLUVIA TRAP.

SIR,—The statement of Mr. Rettie in your last number, under this head, is so grossly false and calumnious, that I must beg of you at once to give it my most unqualified denial; and as I cannot expect you to find room for particulars, I will not attempt to bandy words with so unscrupulous an opponent. I have, therefore, at some expense, procured an official copy of the drawing and specification of his patent (for "Artificial Fuel") on which he founds his claim, which I have placed in my office at No. 26, Lombard-street, with all the correspondence and particulars relating to the subject, for the inspection of any person who may feel sufficiently interested in the matter. The trap in question is neither the invention of Mr. Newman nor Mr. Rettie, but was patented by a Mr. Hawkins in 1821, and has been in use by him and his successor, Mr. R. Wiss, of Charing Cross, ever since.—I am, Sir, &c.,

J. BUNNETT.

*** We have, on strong representations, yielded our determination to admit no further letters on this subject in favour of the above, but will not again depart from it.

Miscellanea.

MASONS' PROVIDENT INSTITUTION.—The second annual meeting of the above excellent institution was held on Tuesday evening, February 1st, at the City of Westminster Mechanics' Institution, Mr. Wm. Haysom in the chair, for the purpose of receiving the committee and auditors' report for the past year, which left a balance in the hands of the treasurer (Mr. Wm. Freeman) of 209*l.* 17s. 5d., including handsome donations from Mr. John Foot, Messrs. H. and J. Lee, Sir De Lacy Evans, M. P., and others. Thanks having been voted to the late direction, a committee of twenty-five was appointed for the ensuing year, with instructions to take into consideration the propriety of announcing an election for one or more candidates for aid from the funds at the next half-yearly meeting.

PROVINCIAL.—The Priory Church Committee at Christchurch have authorised Mr. Ferrey to obtain a tender for the restoration of the stone rood-screen, &c.; also for its removal, objections to which were stated by Mr. Ferrey. ——A large conical chimney at Ravenhead Flint Glassworks has fallen.——Preparations are being made at Manchester Cathedral for the bishop's installation.——The works at Grimsby new docks are so far advanced that the water will be shut out over an extent of 1½ miles in length by the end of March.——The Hull Railway Dock has been finished for 55,159*l.* odd, in place of 60,397*l.*, the engineer's estimate. The Victoria Docks have made considerable progress during the past year.——On Friday, last week, the foundation stone of the Sunderland Docks was laid with great *éclat*. Mr. Murray is the engineer, and Mr. Craven the contractor.——The Gateshead Town Improvement Committee of the Council have memorialised the Woods and Forests for a repeal of the duty on bricks used in draining towns.——Plans for the new Corn-market at Edinburgh have been prepared by Mr. Cousin. The council there have had a discussion on the propriety of letting Nelson's Monument at a lower rent than usual, to a tenant who wishes to "give the public the command of the western heavens, as he intended for that purpose erecting astronomical instruments in the monument."

WESLEYAN CHAPEL, EAST-INDIA-ROAD.—On Monday, the 7th inst., the Building Committee, with the architect, Mr. Wilson, and Messrs. R. and E. Curtis, the builders, met for the purpose of testing one of the framed principals of the roof of this chapel, by hydraulic pressure. The bolts of the truss, at the suggestion of one of the Committee, having been galvanized, which was not intended by the original specification, while driving some of them during the frosty weather, six or eight of the heads broke off like cast-iron, and Messrs. Curtis refused to take upon themselves the responsibility, fearing that the process had had the effect of injuring the ductile properties of the iron. A correspondent informs us that the principals and iron withstood the test of nearly 20 tons in the centre, with a deflection of less than half of an inch, the span of the principals being 50 feet, thereby satisfying those who were present of the strength of them, and that galvanizing does not injure wrought iron.

GLASS TRADE. — DISOBEDIENCE. — A workman lately brought before the Handsworth petty sessions for wilful disobedience of orders, and consequent damage to the extent of 5*l.*, was found liable to imprisonment with hard labour, for three months, though under the circumstance of his agreement with his employers, the abatement of 13s. 10d. alleged wages due, and the payment of costs, was deemed sufficient as a caution.

BUILDERS' BENEVOLENT INSTITUTION.—A meeting of the committee of the above institution was held on Monday last, at the Freemasons' Tavern, when the secretary read a very favourable report as to the progress of the subscription list, and a letter, accompanied with a design for an asylum, was sent in by Mr. J. E. Ebbs, architect. The committee, with thanks, regretted that, until they were furnished with a very large addition to the building fund, they were not in a position to entertain any proposal for the erection of an asylum.

PROJECTED WORKS, &c.—Tenders have been called for by advertisement for the erection of a new hospital in Endell-street, Long Acre; a lecture-room, chemical laboratory, and other alterations at the Queen's College, Birmingham; for the construction of certain under-ground and other works at the Wellington station, Leeds, comprising arching, retaining walls, cast-iron girder, flagging, road paving, &c.; also for the construction of 2,000 yards lineal and upwards of sewers for the Liverpool Health Committee; for a supply of best Guernsey granite, pit ballast, and flints, at per cubic yard, in St. James's, Clerkenwell; and for a survey, plan, and valuation of the township of Courch, in the parish of Snaith, Yorkshire, and a similar plan, &c., for Snaith township.

GREEK VASES.— On the occasion of a paper being read at the Society of Arts, on the 19th ult., by Dr. Harding, "On some ancient Vases excavated by him from Tombs near Hexamili, on the Isthmus of Corinth, Mr. Birch, of the British Museum, said it was only of late years that the conclusion had been come to that large manufactories of vases existed in Greece; they had always been supposed to be of Etruscan produce. The fictile art had been supposed to be confined almost exclusively to Italy, although numerous excavations had been made at Athens, and a few at Corinth, which had produced specimens similar to those exhibited, and which he divided into classes. The most ancient vases (and which are distinguished from all others by the material of which they are composed) are of a light yellow clay, and have figures and animals painted on them in a morone colour: their date is supposed to be 616 years before Christ. A second class of vases is of a pale red clay, and the figures, instead of being of a morone colour, were traced in black, in order to shew the details more distinctly. This style appears to date from the fifth to the middle of the fourth century before Christ. The third class is one in which the colour was laid on by means of a reed. But, perhaps, the highest style, and one peculiar to the vases found at Athens, is that in which the outline of the figures, &c., is traced on the body of the vase, in white paint, or a sort of carbonate of lime. The specimens exhibited he thought peculiarly interesting, as deciding that the vases of Italy may be considered to be the manufacture of Greeks settled there, and not as having been imported from Greece into that country.

BRECON CATHEDRAL.—Mr. Jesse, in an edition of Hofland's "Angler's Guide," recently edited by him, makes an appeal in favour of the old cathedral at Brecon, now fast mouldering away, neglected, forsaken, and almost unknown. "Who can see it," says Mr. Jesse, "without feelings of the deepest regret? No solemn anthem now ascends to heaven—no choral praise is heard. The insidious ivy creeps through the roof, the floor is damp, and the old oak stalls, with their curiously carved Misereres, are fast falling into decay." We hope that the expostulation will not be in vain. If, as there is reason to believe, the Bishop of St. David's be conscious of the decay of this sacred building, so peculiarly committed to his charge, some attempt at restoration may be expected.

COCHRANE'S CURVILINEAR SAW-MILLS, just erected at Woolwich dockyard, bevil the framework timbers and cut all manner of crooked trees along the grain, so that, by aid of subsequent steaming, useful planks are said to be made from what once were useless lumber.

WARMINGTON CHURCH, NORTHAMPTONSHIRE.—Mr. Caveler is preparing for publication architectural illustrations of this beautiful church, misprinted in our last week's notice of Northamptonshire churches as 'Wannington.' A correspondent points attention to Titchmarsh Church in this county, as one of the richest in it.

KENSINGTON.—The whole of the guardians of this parish have resigned, in consequence of the refusal of the Poor-law Commissioners to modify an order, sent to the guardians, to test all applications for relief by offering labour. The suspension of building operations in the parish has driven so many applicants to them, that they found they could not in all cases adhere to the order without cruelty.

THE NEW MUSEUM AT BERLIN, commenced in 1841, from Stüler's designs, at the back of the museum designed by Schinkel, is now completed. The *Athenæum* gives the following particulars of it:—The ground floor will be occupied by ethnographical antiquities and such as illustrate the costume of various nations and races, disposed in rooms whose architecture itself is so *costumed* as to be in accordance with the objects contained in them. In this respect the rooms allotted to the Egyptian antiquities that originally formed the the Minutoli and Passalacqua collections are remarkably striking and characteristic—their walls and ceilings being faithful imitations of genuine examples of Egyptian decoration, copied on the spot. The general *vraisemblance* so produced enhances the interest as well as the effect of the antiquities themselves. In this part of the museum is a cortile or hypæthral atrium with colonnades on its sides, which conveys an equally satisfactory and impressive idea of Egyptian architecture. The degree of illusion which it is calculated to produce will be materially strengthened when the antique colossal ram shall have been placed in its centre. The upper rooms on the first floor of the building are intended to receive the valuable and extensive collection of casts, among which are several colossal groups and figures, including those of Monte Cavallo and the two Farnese. For the rooms themselves decoration has been employed very liberally; they having coloured marble columns—and the walls being incrusted in the lower part with marble or scagliola in which *bas-reliefs* and friezes are inserted as pannels, while the upper space is left for compartments in fresco. The rooms on the second floor are for the collections of engravings and drawings; and are, like the others, made to display much variety of embellishment, but in a lighter and comparatively playful style. The principal staircase is only in progress, but it will ultimately become something superlative of its kind, adorned as it will be with a series of colossal statues and one of frescoes, on which latter Kaulbach is now engaged. Not the least striking feature in this staircase is the magnificent roof (similar in character and construction to the open timber roofs in Gothic architecture), in which Stüler is said to have imitated, if not exactly copied, the idea of that introduced by his master, Schinkel, into his design for King Otho's Palace at Athens.

SOCIETY OF BRITISH ARTISTS.—Professor Ansted's lectures have been numerously attended, and will prove useful.

CURRENT COMPETITIONS.—Mr. Editor: If you have a corner to spare next week, perhaps you will not object to insert a few lines respecting some of the competitions now before the profession. What I wish is, merely to draw your attention to the matter, so that you may keep your eye on the proceedings of a few committees; for instance, those for erecting the "Training College at Cheltenham," the "Brighton College," and the "Fulham Workhouse." With respect to the Cheltenham College, has any one, who applied for the particulars, been favoured with the views of the committee (if there be one) with respect to the amount of premium to be given? or if the architect whose plans are selected will be employed to carry out the work? or if they will keep his designs without remunerating him for them? Just look to the advertisements issued by them, and have a peep at their "stipulations," and see what you can make of them; it seems to me as though the parties who have concocted the affair, have determined not to give the proper instructions to competitors, so that the favoured one may slip into the "job" all the more quietly. Report does *not* speak well of the other two mentioned, so be so good Mr. Editor as give them all a little of your sage advice, something that may come home to their "gutta percha" consciences—a few words as a P.S. to this, with your three stars shining so brilliantly before them.—A COMPETITOR FOR THE WORKHOUSE.

*** All in good time. We know that some, at all events, of the guardians of the Fulham Union are most honourable men, and will strive to act fairly. Let them insist on having professional assistance in the selection.

AN IRON 'HORSE' of 100 tons weight, reared in a blast furnace at the Plymouth Iron-Works, for the last five and forty years, has just been uncovered, preparatory to its removal from the stable, but now inconveniently limited, position in which it has so long stood. This sturdy growth of almost half a century has been found far too unmanageable for removal by mere 'blasting,' the brunt of which it has withstood for the last fortnight, without flinching, so that it has been determined to adopt the scheme whereby our solitary Yankee brethren in the far west often throw such overgrown pebbles clean out of sight, with a single pair of hands, whenever they are found to cumber the ground. In other words, a trench is to be dug for it on the brink of its present position, into which they will pitch it, clear of all further annoyance.

ART IN THE STREETS? YES: ART EVERY WHERE.—A correspondent, referring to our remarks last week on the subject of sentry-boxes, says the *Athenæum*, expresses his desire that Art should be induced to adopt, also, into the family of those for whom she cares, the lamp-posts in our streets and the wooden posts about our parks. On the same principle that is wooing Art amongst us to the service of our domestic utensils, there is no reason why all such things should not have the advantage of her influence, too. It is just as easy to give a tasteful form to these matters as to perpetuate the ancient barbarities. Our correspondent speaks of the lamp-posts opposite Carnarvon-terrace in the Regent's-park as the only really ornamental ones within his recollection; but as we do not ourselves remember the example, we do not recommend it further than by repeating his notice.

TENDERS.

The following are the amounts of four tenders delivered for the proposed additions and alterations to the Devon County Gaol:—

Harvey (Torquay)	£13,900
Mason (Exeter)	13,500
Ware (Exeter)	12,940
Hooper (Exeter), accepted	10,700

MEETINGS OF SCIENTIFIC BODIES

Held during the ensuing week.

TUESDAY, FEBRUARY 15.—Institution of Civil Engineers, 8 P.M.

WEDNESDAY, 16.—Society of Arts, 8 P.M.

THURSDAY, 17.— Royal Society, 8½ P.M.; Society of Antiquaries, 8 P.M.

SATURDAY 19.—Institute of Fine Arts, 8 P.M.

TO CORRESPONDENTS.

"*The Accident at Euston-square.*"—Bare opinions from *anonymous* correspondents are valueless. Communications affecting the character of others should be accompanied by the name of the writer, not necessarily for publication, but as a guarantee of good faith. These two remarks will explain why no notice is taken of several letters on the above occurrence.

"*D.*"—We find no pleasure in giving pain. If our power be as great as our correspondent is good enough to say it is, there is more reason for us to use it carefully. As we grow in power so increase our responsibilities.

"*Brick* v. *Stucco.*"—A pile of letters on this text shall be considered together.

"*D. H.*"—We are unable to advise.

"*G. R. W.*"—Under the 28th of Henry VIII., Commissioners of Sewers are entitled to 4s. per day. What arrangement will be made in respect of the new commission we cannot say.

"*R. S.*"—Shall we print his name to the letter, or not?

"*H. M. B.*"—Declined with thanks.

"*A Builder.*"—Give notice to the solicitors of the line of your intention.

"*R. D.*"—The time is past.

"*Young Architect.*"—The instructions of the Poor-Law Commissioners are published: apply at Somerset House.

"*T.*"—The truth of the statement in question is guaranteed by a respectable party.

"*Rev. C. M.*"—To what statue (in what "Catalogue"), do the remarks apply.

"*Curve of pointed Arches,*" next week.

"*Professor Cockerell's Lectures,*" ditto.

Received.—"W. T." (we will endeavour to call, but cannot promise), "G. J.," "W. B." (Theobald's-road), "W. N." (comes scarcely within our province), "J. P." (Broxbourne). "H. H.," "J. W. A.," (compelled to postpone), "S. G." (thanks), "A Subscriber," "E. N." (London), "W. and J. F.," "E. P." (Kennington), "Bricks," "J. S. M.," "A. M. R.," "J. T. W.," "Mr. T." (Norfolk-street), "J. H. W.," "A Year's Subscriber," "H. A. M.," "Dr. M'C.," "Mr. S." (Lancaster), "G. R. F.," "A. J. G.," "A Novice," "S. B."

Books received.—"The Baronial and Ecclesiastical Antiquities of Scotland," by R. W. Billings and W. Burn; Parts III. to XI. (Blackwood). "Transactions of the Society of Arts for 1847;" Part I. "Church Needlework," by Miss Lambert. (Murray, Albemarle-street). Howard's "Patent Apparatus for moving Windows." "Sanitary Reform and Agricultural Improvement;" by Mr. Charles Ellerman. (Pierce and Hyde, Strand.) "Sacred Harmonic Society: A Letter to the President," (Hoby, Mount-street.) "The Port and Docks of Birkenhead, with Maps, Plans, &c.;" by Thomas Webster, M.A. F.R.S. (Chapman and Hall).

"*Books, Prices, and Addresses.*"—We have not time to point out books or find addresses.

ADVERTISEMENTS.

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AT REDUCED PRICES.

ALWAYS ON SALE, a Large Assortment of DRY PREPARED FLOORING BOARDS and MATCHED BOARDING of all sorts, planed to a parallel width and thickness, from ¼ inch to 1¼ inch thick.
TIMBER, DEALS, OAK PLANKS, SCANTLINGS, SASH SILLS, &c.

Apply at W. CLEAVE'S Timber Yard, Wilton-road, Pimlico (late C. Moore and Son), and Great Smith-street, Westminster.—Mouldings prepared by machinery.

ALFRED ROSLING begs to inform the Trade and Consumers generally, that he keeps constantly in stock a large and very general assortment of Prepared Floor Boards and Matched Boarding, planed to a parallel breadth and thickness, and fit for immediate use; also a variety of machine-prepared Mouldings, which are finished with great accuracy and attention to quality of workmanship.—Southwark Bridge Wharf, Bankside, and Old Barge Wharf, Upper Ground-street, Blackfriars.

T. ADAMS (from Byron and Co.), late S. Dare, MAHOGANY and TIMBER MERCHANT, Bermondsey New Road, near the Bricklayers' Arms. SEASONED FLOORING, MATCH-BOARDING FIT FOR IMMEDIATE USE, and MOULDINGS prepared by machinery, Cut Deals and Scantling of every dimension, Mahogany, Cedar, Rosewood, Wainscot, Elm, Beech, Oak, &c., in planks, boards, veneers, and logs; Pantile, Oak, and Fir Laths; Wheelwrights' Goods. All sawn and prepared goods delivered free of expense (except timber). Sawing charged at mill prices. Very extensive Drying Sheds.

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TIMBER of any size, PLANK, DEALS, and BATTENS, &c., Sawn on the most approved principle. Boards, &c., Prepared, Matched, and Grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and water-carriage, being connected with the Thames by the Grosvenor Canal. Goods fetched from the docks and carted home free of charge.

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G. ELL respectfully invites the attention of Railway Contractors, Builders, Decorators, and the Trade in general, to the extensive assortment of Ladders, Barrows, Machines, Trussels, Steps, &c., he has constantly on hand, at a very low Scale of Prices; is now selling Excavators' Barrows, of ash frames and elm tops, as low as 12s., by a quantity being taken; and the best make of stout ash frames, stays to legs, inch elm top, largest size, as low as 15s. for cash; Ladders commencing at 4d. per round. Every other description of Barrow and Ladder equally low.

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WOOD THOROUGHLY SEASONED in DAYS instead of YEARS, by DAVISON and SYMINGTON'S PATENTED PROCESS, at the Patent Desiccating Company's Establishment (for Seasoning, Sawing, and Planing Wood), at the Grand Surrey Mills, immediately adjoining the Commercial and East Country Docks, Rotherhithe. The new process ensures the entire removal of moisture, hardens the gums, prevents further shrinkage, and strengthens the fibre.—For scale of prices, or license to work the patent, or any further information, address, post-paid, or apply to W. H. TANQUERAY, Secretary at the temporary offices of the Company, 28, New Broad-street, City.

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SUPERIOR SINGLE LATHS £2. per Load, with the following lengths, and the number of Laths each bundle contains:—

10 Bundles, 4 ft., 120 Laths.
5 Bundles, 3½ ft., 130 „
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Straight Barrel Pipes, with Socket Joints, in 2-ft. Lengths.

4-inch.	6-inch.	9-inch.	12-inch bore.
6d.	8d.	1s. 1½d.	1s. 10d. per foot.

Bends and Junctions equally low.

N.B. Drain-pipes of my Manufacture may also be obtained of Messrs. ROSHER, at their Lime Wharfs, Albion Wharf, Holland-street, Blackfriars; Millbank-street, Westminster; Kingsland Basin, Kingsland-road; and Limekiln, Limehouse.

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N.B. To expedite the procuration, personal application at the office would in all cases be better, the party bringing with them the abstract of title, plans, &c.

CHEAP ORNAMENTAL GLASS.—I beg to inform my friends and the public, that I have now completed a new ENGINE, and, owing to the facility with which I can execute orders, I am enabled to reduce my former prices considerably. The prices are now from ONE SHILLING PER FOOT SUP., and borders from SIXPENCE PER FOOT RUN. A large quantity of the cheapest patterns always in stock. Embossing and painted work on the most moderate terms.—CHARLES LONG, No. 1, King-street, Baker-street, Portman-square.—Cash only.

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Venetian Blinds, per square foot	0	8
Best Holland Blinds, on rollers	0	6
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The Patent Pots cannot corrode or get out of order, and can be effectually swept by the sweep's machine.

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WARMING by means of the circulation of WARM AIR.—BURBIDGE and HEALY beg respectfully to inform the public, that they are prepared to undertake the warming of churches, hot houses, &c. with a new apparatus of the most simple and durable construction, which they can warrant to keep in order any length of time, and which is capable of effectually warming buildings of any magnitude in a most economical manner.—BURBIDGE and HEALY, 130, Fleet-street.

HOT-WATER APPARATUS.—The attention of architects, builders, and others is respectfully requested to BENJAMIN FOWLER'S superior method of heating churches and chapels, halls, staircases, conservatories, forcing and greenhouses, manufactories and warehouses, kilns, rooms for drying timber, &c., and every variety of purpose for which artificial heat is required. Within the last twenty years some hundreds of buildings have been heated upon this plan, and the parties for whom they were executed are constantly expressing their satisfaction, also their willingness to vouch for their efficiency. An improved wrought-iron boiler, which requires no brickwork, may be seen in action upon the premises.—BENJAMIN FOWLER, 63, Dorset-street, Fleet-street.

TO ARCHITECTS, BUILDERS, &c.

R. HENLY and Co., WHOLESALE IRONMONGERS, and Manufacturers of KITCHEN-RANGES, STOVES, &c., 196, Blackfriars-road, and 117, Union-street, Borough.

Strong Self-acting Kitchen Ranges, with Back Boiler and Oven, and Wrought Bars:—

3 ft.	3 ft. 3 in.	3 ft. 6 in.	3 ft. 9 in.	4 ft.
£3. 6s.	£3. 12s.	£3. 16s.	£4.	£4. 10s.

Henly's Patent Improved, with back Boiler and Wrought Iron Oven:—

3 ft.	3 ft. 3 in.	3 ft. 6 in.	3 ft. 9 in.	4 ft.
£5.	£5. 15s.	£6. 5s.	£6. 10s.	£7.

Best Register Stoves, at 7d., 8d., and 9d. per inch.
Do. Elliptic do., at 3½d., and 4d. do.

Manufacturer of WOLFASTON'S PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. To be seen in use daily.

Orders from the Country, accompanied with a remittance or reference, will meet with prompt attention.

TO BUILDERS and CARPENTERS.—Elliptic Stoves, double backs, 3d. per inch. Registers, 6½d., 7d., 8d. per inch.

Cottage Ranges, with Oven and Back Boiler, 3 ft., 38s.; 3 ft. 3 42s.; 3 ft. 4, 44s.; 3 ft. 6, 46s.

Self-acting Ranges, with Circular Oven and Back Boiler, best Wrought Bars and Bright Fittings.

3 ft., £3. 3s. 3 ft. 6, £3. 12s. 6d. 4 ft., £4.

Best Patent Cut Clasp.

5d.	6d.	8d.	11d.	1s. 4d.	1s. 10d. per 1,000.
3d.	4d.	6d.	8d.	10d.	20d.

Best Sheet Floor Brads 14s. per cwt.
Best Town Glue 38s. Do. Scotch, 52s. per cwt.

Best Patent Sash Line.

4s. 3d.	5s.	6s. 6d.	7s. 6d.	10s.	12s. per gross.
1	2	3	4	5	6

At F. R. WILLIAMSON'S IRONMONGERY and STOVE WAREHOUSE, 35, Chiswell-street, Finsbury-square.

Lists of Prices had on application at the Warehouse; if by letter pre-paid, inclosing postage stamp.

OLD-ESTABLISHED WHOLESALE IRONMONGERY WAREHOUSE. Kitchen-range, and Stove-grate Manufactory, 18, Cross-street, Walworth.

JOHN GRICE most respectfully solicits the attention of Architects, Builders, and Carpenters, to his Stock of Black and Bright Stoves, Kitchen Ranges, &c., &c.

Black Registers, from 6½d. per in. and upwards.
Bright ditto with Black and Bright Bars, 3l. 10s. and upwards.
Self-acting Kitchen Ranges, with Oven and Back Boiler, Wrought Bars, Fittings Bright:—

3 ft.	3ft. 6 in.	4 ft.
3l. 3s.	3l. 14s.	4l. 5s.

All articles made on the premises and warranted, and delivered free of expense within five miles of London. Bell-hanging in superior style, hung in secret, 9s. per pull.

TO BUILDERS AND CARPENTERS.

BURT and POTTS, York-street, Westminster, Wholesale and Retail Ironmongers, Smiths and Stove Grate Manufacturers. Delivered free within five miles.

Cast Iron Rain-water Pipe:—

2 in.	2½ in.	3 in.	3½ in.	4 in.
1s. 1d.	1s. 3d.	1s. 5d.	1s. 9d.	2s. 2d. per yard.

Sheet Floor Brads, 14s. per cwt. All other Nails in proportion.
Register Stoves with inside backs, 6½d. and 7d. per inch, and upwards.
A variety of Best Black Ground and Bright Register Stoves and Elliptic Stoves, with inside back, 3½d. per in.
Self-acting Ranges with Circular Ovens, Back Boilers, and Wrought Bars:— 3 ft. 3 ft. 6 in. 4 ft.
£3. £3. 8s. £4. 15.
Iron and Steel of every description.

IRONMONGERY WAREHOUSE, 18, Blandford-street, Manchester-square, leading from Baker-street, Portman-square.

TO BUILDERS and CARPENTERS.—In consequence of the recent reduction in the Price of Iron, the following are the present Prices of the undermentioned articles at the above Warehouse:—

Best Patent Cut Clasp.

4d.	6d.	10d.	20d. per 1,000.
6d.	8d.	1s. 4d.	1s. 10d „

Cast Butts.

2 in.	2½ in.	2¾ in.	3 in. per doz.
11d.	1s. 2d.	1s. 4d.	2s.

Best Patent Sash Line.

3	4	5	6 per doz. knots.
6s. 6d.	7s. 6d.	10s.	12s.

Every other article equally reasonable.

Catalogues of Prices can be had on pre-paid application, inclosing postage stamps.—Country orders will meet with immediate attention, and will be executed either upon the receipt of a remittance for the same, or upon the giving a satisfactory reference in London.

JOHN and EDWIN YOUNG, Proprietors.

FENDERS, STOVES, and FIRE-IRONS.—The LARGEST ASSORTMENT of STOVES, KITCHEN RANGES, and FENDERS, as well as General Ironmongery in the world, is now on Sale at WILLIAM S. BURTON'S (late RIPPON and BURTON'S) extensive warehouses. Bright steel fenders, to 4 feet, from 30s. each: ditto ditto, with or-molu ornaments, from 80s.; rich bronzed scroll ditto, with steel bar, 10s. 6d.; iron fenders, 3 feet, 4s. 6d.: 4 feet, 6s.; ditto bronzed, and fitted with standards, 3 feet, 9s.; 4 feet, 11s.; wrought iron kitchen fenders, 3 feet, 4. 6d.; 4 feet, 6s.; bright register stoves, with bronzed ornaments, and two sets of bars, from 80s.; ditto ditto, with or-molu ornaments, from 6l. 6s.; black dining-room register stoves, 2 feet, 18s.; 3 feet, 27s.; bed-room register stoves, 2 feet, 16s.; 3 feet, 24s. The new economical thermio stove, with fender and radiating hearth-plate; fire-irons for chambers, 1s. 9d. per set; handsome ditto, with cut heads, 6s. 6d.; newest pattern, with elegant bronzed heads, 11s. A variety of fire-irons, with or-molu and richly cut heads at proportionate prices. Any article in the furnishing ironmongery 30 per cent. under any other house. The money returned for every article not approved of. Detailed catalogues with engravings sent (per post) free.

WILLIAM S. BURTON'S (late RIPPON and BURTON'S) stock of general furnishing ironmongery is literally the largest in the world, and as no language can be employed to give a correct idea of its variety and extent, purchasers are invited to call and inspect it.—39, Oxford-street (corner of Newman-street). Established in Wells-street 1820.